INTERNET VENDOR PROFILES

CONDUCTED FOR:

JAPAN INFORMATION PROCESSING DEVELOPMENT CENTER

make
Sure all
pages are facing
the right direction.

PREPARED BY:

INPUT, INC.
MARCH 21, 1994

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SECTION I

SCOPE/OBJECTIVES

I. SCOPE/OBJECTIVES

SCOPE:

JIPDEC wishes to gain a greater understanding of the Internet market and the services provided and not yet provided by Internet providers in the UnitedStates. JIPDEC is looking for insight as to how EDI (X.12) will be incorporated if at all by the Internet and through its providers.

OBJECTIVES:

Input will:

- provide an overview of selective Internet providers that are offerings its services to the end-user;
- provide insight of selective EDI vendors that are offering its services;
- provide insight from a user's perspective.

SECTION II

METHODOLOGY

II. METHODOLOGY

INPUT conducted this study over a period of 4 weeks commencing February 23rd, 1994.

The analysis team conducted interviews with Internet vendors/user and selective EDI vendors as it pertains to:

- Services Rendered
- Method of Connection
- Standards/Protocols Supported
- User Expertise Required
- EDI transport Potential

The analysis team conducted interviews with :

- 2 EDI Players (TELINK Systems, Inc., RAILINC)

- 10 Internet Vendors.(PSI, NEARNET, CERFnet, PIPEX, JvNCnet, EUnet, Hong Kong SUPERNET, UUNET/AlterNet, SprintLink and NETCOM Online Services)

- 1 Internet User - Stanford Publications International (SPI)

Discussion Framework used to gain insight as to the workings of both these Internet and EDI providers can found in the Appendix.

In addition, an EDI briefing by Input will take place on March 28th for the JIPDEC delegation at Input's Mountain View , CA offices.

METHODOLOGY

Activity 1

SITUATIONAL ANALYSIS/
INTERNET VENDOR/USER

PROFILES
- Service Overview
- Connection Options
- Application Exploration

Activity 2

EDI VENDOR PROFILES
- Service Overview
- Pricing
- Internet Connection Perspective

Activity 3

EDI VENDOR/
MARKET OVERVIEW

ENGAGEMENT ANALYSIS

DELIVERABLE 1:

EDI Market
Presentation

DELIVERABLE 2:
Interview Detailed Findings

SECTION III

SUMMARY OF FINDINGS

Introduction

- ❒ Internet is a collection of multiple backbone networks throughout the world connected through complex global arrangements.
  - TCP/IP protocol provides the means to interconnect these networks and provide direct access for other enterprise, local, and/or regional networks wishing to interconnect or have access to the Internet.

- ❒ The Internet consists of more than 25,000 networks in 61 countries.
  - Gateways allow at least e-mail connectivity to extend to 146 countries
  - There are an estimated 20,000,000 Internet users
  - Network growth proceeds at 10% per month

- ❒ Most networks are operated by organizations that either provide access to internal staff or specialize in providing widespread public Internet access to end-users, i.e. commercial enterprises, educational, individuals, etc. Commercial use is surpassing educational use.

- ❒ Internet services include:
  - Access
    - Comes in several flavors depending upon transport capacity and bandwidth provided.
    - Can occur over almost any medium from simple telephone dialup connection to satellite of high speed fiber.
  - Services technically provided number in the hundreds and are determined by a combination of the access computer software and available bandwidth.
    - Most common services include: transferring files, e-mail, fax messaging, remote computer access.
    - Other popular services include: information browsing, automatic information delivery, information searching, information archival, real-time interactions, directory look-up, and multicasting of audio and video programs.

Internet Access

- There are basically two kinds of access provided by Internet access service providers:
  - Direct Access allow end-users to connect their computers to become part of the Internet. There are two forms:
    - *Dial-up* using a modem and appropriate connectivity software for speeds of 9.6 Kpbs to 19.2 Kpbs.
    - *Dedicated/leased lines* for speeds of 56Kpbs to T1 (1.544 Mpbs) and above.
    - Basic Internet services available include: *e-mail, file transfers, news, and remote computer access* . Other services available depending upon access and service provider capabilities.
    - Complex fee structures include one-time subscription, installation, usage, and/or bandwidth charges depending up type of access and equipment requirements.
  - Indirect Access allows end users to use a "dumb terminal" to access a computer host directly connected to the Internet.
    - Dumb terminal from a host system or a PC/laptop dialup at speeds of 1200 BAUD to 4800 BAUD.
    - Internet services generally limited by provider to *e-mail* or *remote computer access* (to customer host system). May also include *news* and *uucp file transfers*.
    - Fees are generally based on connection time; may include a one-time subscription fee.
- All the Internet service providers interviewed provide the full complement of TCP/IP access services.

Access Service Hardware and Software Requirements

- Indirect Access
  - PC/laptop using 1200/2400/4800 Baud modems and standard communications software.
  - Internet connectivity provided by host system systems use of *uucp* or *telnet* access protocols.
    - *UUCP* not offered by NEARNET, CERFnet, PIPEX, and SprintLink; remaining providers support *UUCP*.
- Dialup Direct Access
  - Modem must support
    - V.32 (9.6Kpbs) or V.32bis(14.4Kpbs)
    - V.42 (error correction)
    - V.42bis (compression)
  - Internet connectivity (IP access) provided by SLIP or PPP software running on PC or workstation.
    - IP access is universally available by the Internet service providers.

- Dedicated Direct Access
  - High speed leased-line
    - All providers will act as a local phone company/PTT coordinator to arrange for line provisioning and service if line service problems arise. Generally, in those cases where there is a line problem there is no compensation for the customer. In those cases where providers Internet access network is at fault, there is usually service credit awarded on some portion of the monthly access fee.
  - Host system must have TCP/IP capability.
  - Routers are required to allow for IP(network) addressing and direct access to one or more other systems or networks. DSU/CSU also required for dedicated access services.
    - Generally routers can be purchased or leased from the service provider; customers may supply their own router so long as it is compatible with the service provider's environment. There are some providers who do not provide any equipment and leave it up to the customer to lease or purchase the appropriate equipment themselves.
    - Router and DSU/CSU installation, configuration, and maintenance services supplied by the service provider are generally part of the access service package. Some providers will allow router customers to do their own installation and maintenance while a few do not provide any installation, maintenance or service. A few providers, such as CERFnet and NEARnet, require that they exclusively manage the router in all cases. JvCNET prefers to manage it, but will allow customer to perform their own maintenance.

Internet Facilities Summary

The following section summarizes the main and most popular services available on the Internet. Service providers will provide access to most or all of these services. Access to other services depend upon the providers access to other member networks or their willingness and/or capability to provide such access.

❒ *Access Protocols* allow users to establish an Internet connection.

telnet		Allows network to network access when on Internet
UUCP	Unix-to-Unix Copy	Standard UNIX file transfer protocol. Simple connectivity and file transfer utility. Not always available by provider.
SLIP	Serial Line Internet Protocol	Connectivity software used to gain direct Internet access using a modem at 9.6 Kpbs to 14.4 Kpbs.
PPP	Point-to-Point Protocol	Connectivity software used to gain direct Internet using at modem or a dedicated line. Morning Star PPP is a popular connectivity software for UNIX machines.
TCP/IP	Transmission Control Protocol/Internet Protocol	Internet protocol. Host system/network must have this in order to connect directly with dedicated lines to the Internet.

❒ *Messaging Protocols* are used to provide access or transfer different types of information throughout the Internet.

FTP	File Transfer Protocol	Used for accessing files on remote hosts and/or transferring files between systems.
SMTP	Simple Mail Transfer Protocol	Used for transferring e-mail between remote hosts.
NTP	Network Time Protocol	Used to synchronize time on remote hosts
NNTP	Network News Transfer Protocol	Used to send news articles in real time
SNMP	Simple Network Management Protocol	Used to collect network usage statistics.

- From the perspective of both Internet service providers and EDI service/software providers, X.12 electronic commerce transmission (EDI) as a messaging protocol, is not likely to be an Internet service offering due to Internet's inadequate security and audit trail capabilities.

- *Internet Utilities* are software services or tools that facilitate communicating, searching for, and/or accessing information on the Internet.

Gopher	Menu driven software tool that makes browsing/navigating the Internet much easier. Can access a resource without having to look up the address or name of the resource . There can be different type of Gophers and well as some basic standard ones.
Archie	An archive server system which knows about most of the anonymous FTP archives and tells you where to find things.
WAIS	Wide Area Information Service is a system for searching the network for information via keyword search. Fetches documents matching keywords.
TALK	Software that allows users to converse with another user logged in anywhere on the Internet. Target host must support his software.
IRC Chat	Allows multiple electronic conversations among several Internet users.

❒ *Major Internet Networks referred to:*

CIX	Commercial Internet Exchange	A consortium of networks - founded by PSI, CERFnet, UUnet - which allow the exchange of traffic between their networks and bypassing the main Internet backbone.
NSFnet	National Science Foundation	Network of government and private research organizations.
PSINet	Performance Systems Internationals Network	Major U.S. Internet backbone and access services provider. Provides links to global networks.
ESNET	US Department of Energy	Network of government and private research organizations.

❒ *Information Sources*

Anonymous FTP Archives	Storehouses of free information, software, sounds and images available to anyone on the Internet.
USENET News	Is a distributed bulletin board system where anyone may read and post articles in any one of over 2000 topics or categories covering many different topics including culture, politics, science, computer, etc. It is a separate computer network that links many pairs of computers. It has many gateways into the Internet. USENET carries USENET news groups, an electronic forum of more than 4500 groups.
CLARINET news	A special category of USENET news which is actually UPI commercial news wire. Users can only read these groups, not post to them. They are organized into categories including financial, headlines, feature, and technical. This is a subscription service which is paid for and made available by Internet access service providers. Therefore this may not be available from all service providers.

EDI Vendor Summary

- EDI vendors see little reason to use the Internet to transmit X.12 electronic commerce information. Again these vendors feel that the Internet does not offer, at this time, adequate security and audit trail capabilities.

- Generally, IBM-based EDI vendor systems, such as RAILINC, would preclude use on many of the predominatly UNIX-based Internet.

- X.12 is the dominating EDI protocol; however EDIFACT is slowly emerging as a co-dominant standard.

SECTION IV

DETAIL FINDINGS

INTERNET PROVIDER: CERFNET

INTERNET PROVIDER: CERFNET

Company & Service Overview

- CERFnet (California Education & Research Foundation Network) is an Internet network service provide primarily serving the education market (80% education/20% commercial) marketplace.
  - Membership is open to all organizations and individuals in the U.S., including any university, college, commercial enterprise, industrial or government facility, hospital, or library.
  - It is a founding member of the Commercial Internet Exchange (CIX).
  - Its network links over 100 of the leading research and education centers in California, and thousands of individual users nationwide at data transfer rates of up to 45 Mbps.
  - Its purpose is to advance research and education by assisting the interchange of information among research, education, and commercial institutions.

- CERFnet offers several different dedicated leased-line and dial-up IP connectivity options to the Internet. CERFnet also provides:
  - 24hr network surveillance
  - technical consulting
  - (800) telephone hotline support
  - weekly reports on network activity
  - bimonthly newsletter
  - seminars
  - special communications software to members
  - full TCP/IP capabilities, including SLIP
  - remote logins and file transfers
  - use of customer domain name or that of CERFnet
  - electronic mailbox
  - NetNews fees at no extra charge

Summary of CERFnet Dedicated Access Service Offering

High Speed Access Service[3,4,5,6]	***Description***	***Installation***	***Monthly Fee***	***Monthly Circuit cost***
CERF SMDS[1]	45 Mbps service.	$4000	$2000	Dependent on distance between customer site and CERFnet backbone node.
CERT 1544[1]	1.544Mpbs (T1) service.	$4000	$1675	$1000
CERF 56[2]	56 Kpbs service.	$2500	$1300	$125

Notes:

(1) CERFnet provides hardware installation, cicso 3102 router, modem, CSU/DSUs, port at backbone node, 1.544Mbps service to back bone node 24 hrs/day, 7 days/week.

(2) CERFnet provides hardware installation, cicso 3102 router, modem, CSU/DSUs, port at backbone node, 56Kbps service to back bone node 24 hrs/day, 7 days/week.

(3) Routers, modems, and CSU/DSUs located at customer site. CERFnet only takes responsibility up to router.

(4) Customer network/system must support TCP/IP.

(5) CERFnet requires that router be dedicated to Internet access and manages it in all cases.

(6) CERFnet offers no compensation if the router or service is down.

Summary of CERFnet Dial-up Access Service Offering

Dial-up Service	***Description***	***Installation***	***Monthly Fee/User ID***	***Connection Fee***
DIAL n' CERF Plus	Provides access using SLIP and PPP at 14.4Kpbs	$50	$20	Weekdays $5/hr Weekends $3/hr
DIAL n' CERF	Provides SLIP or shell access.	$50	$20	Weekdays $5/hr Weekends $3/hr
DIAL n' CERF AYC	Provides SLIP or shell access.	$50	-	$200 (flat rate)
DIAL n' CERF USA	Provides SLIP or shell access using an 800 number.	$50	$20 (with modem)	Weekdays $10/hr Weekends $8/hr



Your connection to the Internet

Features:

Connects you to the Internet

- Largest network of networks in the world
- 3.5 million users
- Hundreds of databases worldwide
- Largest bulletin board system in the world
- Access 107 countries

Electronic mail gateways between the Internet and Compuserve, MCImail, and America Online

Commercial traffic allowed

Toll-free and electronic-mail help (24 hours a day, 7 days a week)

Training classes at discounted rates

Professional staff for expert assistance

Connection speeds to fit your budget

Benefits:

Turnkey solutions from dial-up to dedicated lines

Expands your information and technology base

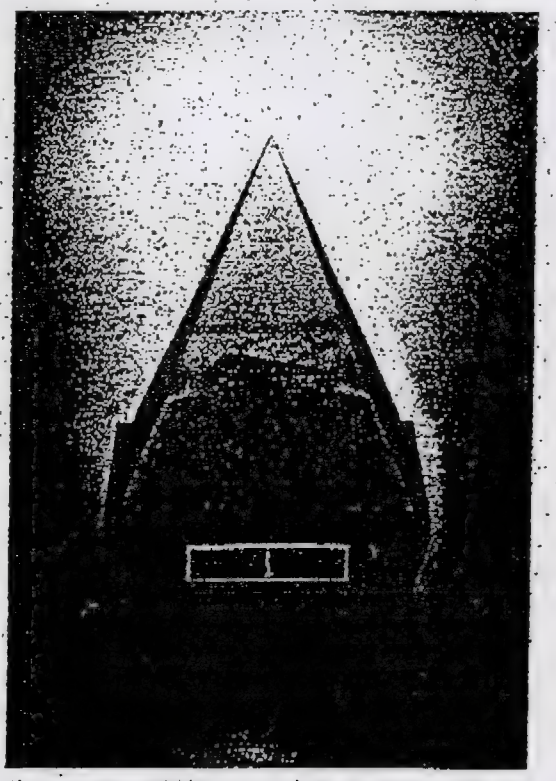
Premium customer services at no extra cost

Easy to access

Exchange information quickly

Collaborations with colleagues worldwide as easily as if they were in the next room

Most current information available at your fingertips



Winner of the 1990 Interop Achievement Award

CERFnet

Your Communications Edge

California Education & Research Federation Network
P.O Box 85608, San Diego, CA 92186-9784
Phone: (800) 876-CERF or (619) 455-3900
Fax: (619) 455-3990
Internet e-mail: help@cerf.net
A division of General Atomics

Printed on recycled paper

Dial n' CERF
Dial n' CERF USA
Dial n' CERF AYC

The Internet is wherever you are

Features:

Internet Compass$_{sm}$ - a menu-driven navigation aid to help you be productive on the Internet quickly and easily.

Electronic mailbox

NetNews feeds at no extra charge

Full TCP/IP capabilities, including SLIP

Remote logins and file transfers

Commercial traffic allowed

Use your domain name or ours

Supports modem standards v.42, v.42bis, v.32, v.32 bis, PEP, MNP5

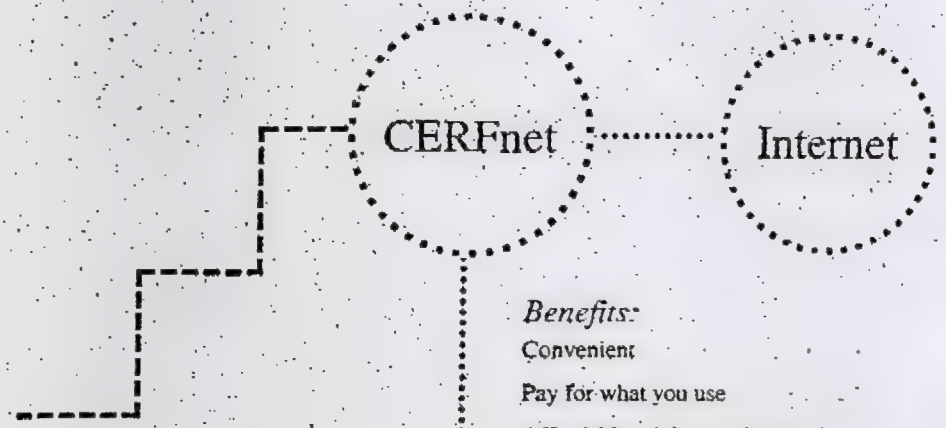
Customer support online and toll-free phone (24 hours a day, 7 days a week)

Dial n' CERF for low hourly charges

Dial n' CERF USA for toll-free hourly rates

Dial n' CERF AYC for fixed monthly rates

MasterCard and VISA accepted



Benefits:

Convenient

Pay for what you use

Affordable minimum charges

No premium for high speed

Easy-to-use electronic mail

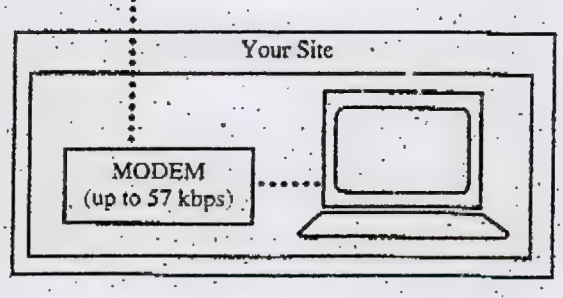
Perfect for travelers or occasional users

Individual and small business identity on the Internet

All-inclusive accounts for business or personal use

Interchangeable services: go from Dial n' CERF to Dial n' CERF USA and back, whenever you like

Gateways to most commercial e-mail providers



CERFnet

Your Communications Edge

California Education & Research Federation Network
P.O Box 85608, San Diego, CA 92186-9784
Phone: (800) 876-CERF or (619) 455-3900
Fax: (619) 455-3990
Internet e-mail: help@cerf.net
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CERF 56
CERF 1544
CERF 45000

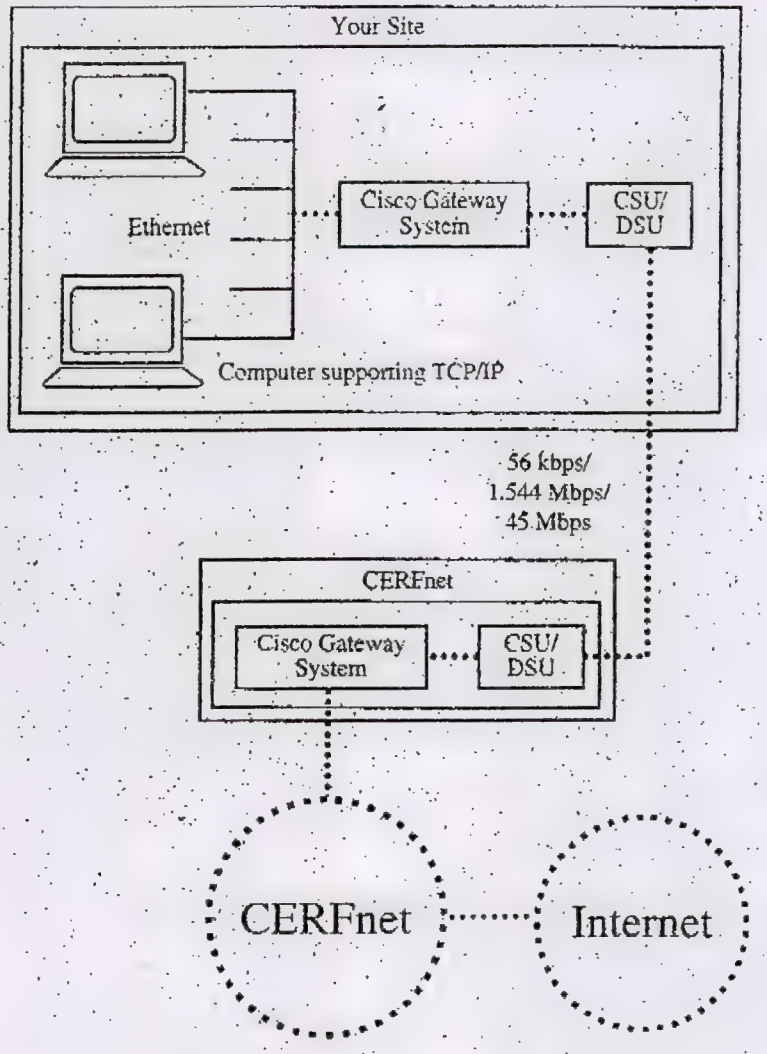
When speed is crucial

Features:

- High-speed access using digital communications links at 56 kilobits per second, 1.544 megabits per second, and 45 megabits per second
- Supports large usage, low latency and high bandwidth requirements
- Service monitoring and repair (24 hours a day, 7 days a week)
- Information service assistance
- One hop to the backbone
- Commercial traffic allowed
- Name Service and NetNews feeds at no extra charge
- Conveniently located POPs throughout California

Benefits:

- Turnkey Internet connectivity
- Rapid response times
- Quick information exchange
- Easy to install
- Easy to operate
- Expert assistance from professional staff
- Easy upgrade paths to faster services



CERFnet

Your Communications Edge

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Internet e-mail: help@cerf.net

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About CERFnet

CERFnet is an Internet network service provider that operates throughout the state of California and nationally. CERFnet membership is open to all organizations and individuals in the country, including any university, college, commercial enterprise, industrial or government facility, hospital, or library.

CERFnet offers several different dedicated leased-line connection options:

CERF 1544 (1.544 Mbps)
CERF 56 (56 kbps)

CERFnet also offers dial-up IP connectivity to the Internet through a wide selection of offerings:

DIAL N' CERF at a low hourly rate
Dial N' CERF AYC at a fixed monthly rate
DIAL N' CERF USA with 800 number access at an hourly rate

All basic dialup accounts include either SLIP access or shell access.

Dial N' CERF Plus allows dial-up SLIP and PPP connectivity for LANS at 14.4 kbps.

CERFnet also provides twenty-four-hour network surveillance and technical consulting, a telephone hotline (800) 876-2373, weekly reports on network activity, a bimonthly newsletter, CERFnet-sponsored seminars, and special communication software offers for CERFnet members.

In addition, CERFnet operates a Network Operations Center (NOC), an online Network Information Center (NIC), and provides Network Information Services (NIS). CERFnet supports the TCP/IP, CLNP, and DECNET protocols.

CERFnet is a founding member of the Commercial Internet Exchange (CIX). The CIX allows CERFnet customers to exchange commercial traffic with other CIX member network customers. These communications are not subject to government mandated acceptable use restrictions.

CERFnet links over 100 of the leading research and education centers in California, and thousands of individual users nationwide, at data-transfer rates of up to 45 megabits-per-second. CERFnet customers gain high-speed access to the resources available on the worldwide Internet, such as the supercomputer centers, online library catalogs, and specialized databases. 800 number dial-up access is available from anywhere in the continental United States.

CERFnet advances research and education by assisting the interchange of information among research, education, and commercial institutions, through both high-speed and dial-up data connections. CERFnet began with support from the National Science Foundation and is a project of General Atomics, a San Diego-based research and development company.

Network Information

Various documents, including information on CERFnet and the CIX, are available on the CERFnet NIC. These are available via anonymous ftp to nic.cerf.net. There are several sub-directories which contain the CERFnet bimonthly newsletter, acceptable use policy, brochure, user's guide, and statistics. Basic networking software is also available.

Contact information:

June 29, 1992
nic.cerf.net

CERFnet History

In June, 1988, a proposal was submitted by the San Diego Supercomputer Center and General Atomics to the National Science Foundation (NSF) to establish the California Education and Research Federation Network (CERFnet). Thirty-four of the leading research and education centers in California participated in the proposal effort. In March, 1989, $2.8 million was awarded by the NSF to initiate CERFnet. The institutions contributed additional funds in membership fees, support personnel (such as training, consultation, and documentation), and maintenance of equipment needed to connect and support their CERFnet link.

Today, CERFnet links over 300 research and education centers with data transfer rates of up to 45 Megabits-per-second. CERFnet provides enhanced communication among researchers, educators and private industry, and high-speed access to the resources available through the National Science Foundation Network (NSFNET) and the Internet, such as supercomputer centers, online library catalogs, and specialized databases.

The Research Need

Before CERFnet, some of the institutions had medium-speed access to the NSFNET backbone but a substantial increase in bandwidth and connectivity was needed to encourage usage by making access easier, faster, and cost-efficient.

The need for CERFnet was two-fold. The availability of high-speed networking and supercomputer power greatly expands computational possibilities. This stimulates a wider range of scientific explorations and makes projects more feasible. Complex projects frequently involve the sharing of databases, software, and results by researchers in different institutions and multiple disciplines. Project feasibility is enhanced by the integrated communications environment offered by the Internet by achieving better collaboration and interaction with distant colleagues and resources.

Many of the institutions were already experienced in using NSF and other supercomputer centers, such as the San Diego Supercomputer Center, the National Center for Atmospheric Research, the Lawrence Livermore National Laboratory, and the National Magnetic Fusion Energy Center. Today, CERFnet allows convenient access to these state-of-the-art facilities. CERFnet also provides capabilities through the use of TCP/IP, which include remote logins, file transfers, and telnet sessions.

CERFnet Phase I

CERFnet was built on existing data communication links--some have been upgraded to higher bandwidths. New links were installed between March and November 1989 to expand the network to all of the original research and education centers.

CERFnet's high-speed backbone nodes were installed between May and June 1989 at the University of California, Los Angeles (UCLA), University of California, Irvine (UCI), the San Diego Supercomputer Center (SDSC), and the California Institute of Technology (Caltech). The backbone was expanded to the University of California Office of the President in Oakland in November, 1989, and to San Jose in December, 1990.

CERFnet Phase II

In March, 1990, CERFnet submitted a proposal to the NSF for Phase II. Phase II proposed to establish new Internet connections for three four-year colleges and two community colleges. CERFnet also proposed to establish gateways to fifteen FrEdMail (Free Educational Mail) Network sites.

The FrEdMail Network is a grass-roots data- communications network that allows teachers and students at K-12 institutions around the country to exchange teaching materials, student assignments, and information on workshops,

job opportunities, and national legislation affecting education.

The institutions proposed in CERFnet Phase II were brought online between September,1990 and March,1991, at a cost of $226,000 over two years.

Further Expansion

Since March, 1989, the network has grown to include over 300 research and education centers. Several classes of memberships were introduced since 1989. All of these memberships provide access to the Internet via a dedicated leased line service or by a dial up connection. The dedicated lease line services that CERFnet has provided are CERF T3, CERF SMDS, CERF 1544 (1.544 megabits-per-second); and CERF 56 (56 kilobits-per-second). The dial up connections include DIAL n' CERF, DIAL n' CERF AYC, and DIAL n' CERF Plus which all provide dialup SLIP access up to 57.6 kilobits-per-second. An additional dial up service that has recently been introduced is DIAL n' CERF USA, which uses an 800 number for toll-free connections anywhere in the United States. All of these memberships are supported by subscription fees.

In 1991, CERFnet also established the first Commercial Internet Exchange (CIX) in cooperation with P$Inet amd Alternet. The CIX has expanded to include several additional domestic and international networks. It permits the exchange of commercial traffic between these three networks.

Adopt A School is a program that originated in September 1991 and it allows CERFnet users to connect a local K-12 school to DIAL n' CERF. The CERFnet user helps the school use the connection and the available information on the Internet. The school or CERFnet user provides a terminal/PC and modem. Many staff members have already adopted their schools their children attend or that are in their neighborhoods. Currently, there are about 19 schools involved in the program.

CERFnet also establised their first T1 connection near the end of 1991. This 45 megabits-per-second connection extends between two of CERFnet's backbone sites, UCI and California Institude of Technology. The success of thisconnection w

Three international links were also completed by the end of 1991. The Federal University of Rio de Janeiro (UFRJ) came on-line in December 1991. The connection between CERFnet and UFRJ is intended to provide, among other things, Internet access to a regional network located within the state of Rio de Janeiro. Initially, nine institutions will be connected to this local network: Brazilian Center of Investigating Sciences (CBPF), Fundacao Oswaldo Cruz (FIOCRUZ), Institute of Mathematics Prue and Applied (IMPA), Polytechnic Institute of Rio de Janeiro (IPRJ), National Laboratory of Computer Science (LNCC), Pontifical Catholic University of Rio de Janeiro (PUC-Rio), State University of Rio de Janeiro (UERJ), Federal University Fluminense (UFF), and the Federal University of Rio de Janeiro (UFRJ). Eventually the network will expand to include research institutions located in the state of Sao Paulo.

Three of these institutions (CBFF, IMPA, and LNCC) are laboratories of the National Council of Scientific Development and Technology, which is the equivalent of the National Science Foundation. Two are federally funded universities (UFF and UFRJ) and FIOCRUZ is the laboratory of the Federal Health Ministry.

The CICESE Institute located in Ensenada, Mexico was brought on-line in November 1991. The institute will have a 64 kbps satellite link to the SDSC via the Mexican satellite, Morelles II.

The System Engineering Research Institute (SERI), Seoul Korea was brought on-line in March 1991. SERI is similar to the National Foundation sponsored supercomputer centers. SERI performs a large number of research and development products for both domestic and foreign clients through the application of its high level resources, such as supercomputers. The link between SERI and CERFnet will provide Internet access to the Korean National Research Network (KREONet).

May 20, 1992
nic.cerf.net

California Education and Research Federation Network
General Information

(1) Name of resource
California Education and Research Federation Network

(2) USPS address
CERFnet
A Division of General Atomics
P. O. Box 85608
San Diego, CA 92186-9784

(3) Electronic mail
help@cerf.net

(4) Telephone
Information (619) 455-3900
Hotline 1 800 876 CERF

(5) Description
The California Education and Research Federation Network, CERFnet, is a data communications regional network that operates throughout California. The purpose of CERFnet is to advance science and education by assisting the interchange of information among research and educational institutions through high-speed data communications techniques.

CERFnet links over 300 of the leading research and education centers in California at data transfer rates of up to 1.544 Megabits-per-second (T1). Membership includes the California Institute of Technology, the twenty California State University campuses, the San Diego Supercomputer Center (SDSC), 5 of the University of California campuses (Irvine, Los Angeles, Santa Barbara, San Diego and Riverside), the University of San Diego, Hughes Aircraft Company, Xerox Corporation, and Science Applications International Corporation (SAIC).

CERFnet was launched in the spring of 1989 with a $2.8 million grant from the National Science Foundation. This grant is allocated over 4 years. The grant provided for the connection of 34 research centers to the network. Membership has since grown to over 300. These new memberships are supported through membership fees.

CERFnet offers several different connection options. Membership is open to all organizations in California, including any university, college, industrial or government facility, hospital, and library. A CERF 1544 (T1) or CERF 56 (56 kbps) entitles the subscriber to a dedicated leased circuit to the nearest backbone node.

CERFnet also offers DIAL N' CERF, a dial-up IP service to the network. DIAL N' CERF subscribers connect to the network by dialing-up the nearest backbone node and logging on to a CERFnet terminal server.

The CERFnet backbone nodes are located at UCLA, UC Irvine, SDSC, Caltech, UC Riverside, San Jose and the UC Office of the President located in Oakland, California.

CERFnet also provides 24-hour network surveillance and technical consulting, a telephone hotline (1 800 876 CERF), weekly and monthly reports on network activity, a bimonthly newsletter, and CERFnet sponsored seminars. CERFnet also operates a Network Operations Center, located at the San Diego Supercomputer Center, and a Network Information Center (NIC). Various documents, including

miscellaneous information on CERFnet, are available on the CERFnet NIC. These are available via anonymous ftp to NIC.CERF.NET. There are several subdirectories: cerfnet_news, cerfnet_info, cerfnet_guide and cerfnet_stats, that contain information such as the CERFnet bimonthly newsletter, acceptable use policy, brochure, and user's guide. (The CERFnet NIC is a UNIX based workstation.)

(6)Network Access
CERFnet supports TCP/IP protocol suite. Any IP host on the Internet may access CERFnet sites.

(7) Who can use the resource/restrictions
Use of the network is governed by an acceptable use policy. A copy of this policy is available on request.

(8) Miscellaneous
For more information please contact:

CERFnet
A Divison of General Atomics
P. O. Box 85608
San Diego, CA 92186-9784
(619) 455-3900
help@cerf.net

The California Education and Research Federation Network is your connection to the world. CERFnet links you to the Internet -- giving you access to hundreds of databases and over a million users worldwide. Our goal is to promote collaboration among scientists, engineers, and educators in commercial, government, and academic sectors.

Our commitment is to serve your total communications needs better that anyone else in the marketplace. To keep information flowing smoothly for our users, we offer a variety of customer support services. CERFnet provides a 24-hour hotline, continuous network monitoring and management, an expert staff, and the maintenance support you need.

CERFnet began with the support from the National Science Foundation. CERFnet is headquartered at the San Diego Supercomputer Center and is a project of General Atomics, a San Diego-based research and development company.

CERFnet ADVANTAGES

The World's Information is Yours

Let CERFnet link you to the Internet, a network with hundreds of databases and over a million users worldwide. Expand your information and technology base with CERFnet and be competitive in the global marketplace. Use CERFnet to keep you abreast of the latest developments at the earliest opportunity. CERFnet gives you the edge you need to improve existing products and develop new ones faster.

A Total Commitment

To keep information flowing smoothly, CERFnet offers premium customer services. CERFnet provides a 24-hour hotline, continuous network monitoring and management, an expert staff, and the maintenance support you need.

CERFnet CONNECTIONS

Easy to Install and Operate

A CERFnet connection is easy to install and easy to operate. CERFnet has nodes located throughout California. Your site will be connected to the nearest node, keeping your costs low. For your convenience, we provide all the necessary equipment and our qualified technical staff will install it for you.

CERF SMDS, 1544 and CERF 56

When speed is crucial to conducting successful transactions, you may choose between ourhigh-speed services CERF SMDS, CERF 1544 and CERF 56. All provide quick response times and rapid exchange of information.

DIAL n' CERF Plus

DIAL n' CERF Plus is an economical and efficient alternative for sites with lower startup needs. With DIAL n' CERF Plus, many users can easily access the network with minimal training.

This service uses ordinary telephone lines and modems. When a user needs to access CERFnet, a connection is automatically and transparently made. Several users can use the same dialup connection simultaneously. As your needs grow, adding bandwidth is as easy as adding another modem.

DIAL n' CERF

CERFnet recognizes the need for smaller organizations and individuals to have to access to the same resources as larger organizations. DIAL n' CERF is a cost- effective and convenient dialup service. Dial n' CERF provides both shell access to a host system running UNIX or a user friendly menu system called the Internet Compass. Alternatively a user may run a SLIP connection and have their own IP address and domain name. Dial n' CERF services all run at 14.4Kbps using Telebit T3000 and Worldblazer modems and are available locally throughout California and via an 800 number nationwide.

Membership in CERFnet is open to anyone including any university, college, industrial or government facility, hospital, library or home user.

To signup for a dialup connection either printout and return the form at the end of this message to CERFnet or use your modem and a telecommunications program to call +1 800 723-7363 with your communications parameters set at 8 bits, no parity, and 1 stop bit (8N1) and login as 'newuser'.

All other leased line and LAN dial services must have a signed contract and purchase order to begin. Contact your CERFnet sales rep via e-mail (sales@cerf.net) or call +1 800 876 2373.

CERFnet
Your Communications Edge

CERFnet
CALIFORNIA EDUCATION & RESEARCH FEDERATION NETWORK
P.O. Box 85608, San Diego, CA 92186-9784

Phone: 619 455 3900 or +1 800 876-2373
Fax: (619) 455 3990
Internet E-Mail: sales@cerf.net
-A division of General Atomics-

PRICES EFFECTIVE 1993

DIAL n' CERF Pricing

Service Fees are assessed as follows:

One time installation fee (per organization)	$50.00
Monthly fee per user ID	$20.00

+

Hourly connect charge

Local Numbers in California

Weekday	$ 5.00
Weekend	$ 3.00

Toll Free 800 Number Nationwide (Dial n' CERF USA)

Weekday	$10.00
Weekend	$ 8.00

* Weekend is Friday 1700 PST Through Sunday 1700 PST

No minimum term required.

DIAL n' CERF AYC (All You Can) Pricing

Service Fees are assessed as follows:

One time installation fee (per organization)	$50.00
Monthly flat rate fee	$200.00

Unlimited Internet access for one modem running either SLIP, PPP, or shell access.

Minimum 6 month term required

Dial n' CERF Plus Pricing

Service Fees are assessed as follows:

One time installation fee (per organization)	$500.00
Monthly flat rate fee	$600.00

Unlimited Internet access for one network running either SLIP, PPP, or shell access. CERFnet provides a Telebit Netblazer and modem and installs on customer premises. Customer must provide analog phone line.

Minimum 6 month term required

CERF 56 Pricing

Service Fees are assessed as follows:

One time installation fee (per organization)	$2500.00
Monthly fee	$1300.00

Monthly circuit cost $125.00**

**Only applies to users in Pacific Bell service areas served by CERFnet all other circuit charges vary. Please e-mail or call for a quote

CERFnet provides:Hardware installation, cisco 3102 router, modem, CSU/DSUs, port at backbone node, 56 kilobit-per second service to backbone node 24 hours per day, 7 days per week.

Minimum 6 month term required

CERF 1544 Pricing

Service Fees are assessed as follows:
One time installation fee (per organization) $4000.00
Monthly fee $2000.00*
Monthly circuit cost ***

CERFnet provides:Hardware installation, cisco 3102 router, modem, CSU/DSUs, port at backbone node, 1 1.544 megabit-per second service to backbone node 24 hours per day, 7 days per week.

Minimum 6 month term required

*** Monthly circuit costs are dependent on distance between customer site and CERFnet backbone node.

CERF SMDS Pricing

Service Fees are assessed as follows:
One time installation fee (per organization) $4000.00
Monthly fee $1675.00*
Monthly circuit cost $1000.00

CERFnet provides:Hardware installation,* cisco 3102 router, modem, CSU/DSUs, port at backbone node, 1 1.544 megabit-per second service to backbone node 24 hours per day, 7 days per week.

Minimum 6 month term required

---------- cut here ----------

DIAL n' CERF SUBSCRIPTION AGREEMENT

Subscription Rules

This Agreement is between _____ located in _____, _____ hereinafter referred to as Subscriber and General Atomics located in San Diego, California (collectively referred to as Parties). Whereas General Atomics has agreed to provide computing and networking services to the California Education and Research Federation Network (CERFnet); Whereas Subscriber desires to become affiliated with the CERFnet by connecting to CERFnet;

Now therefore, the Parties agree as follows:

1. General Atomics agrees to allow Subscriber to connect computing facilities at Subscribers site to CERFnet and transmit data over the Network in accordance with the terms of these Subscription Rules and the CERFnet Acceptable Use Policy which is attached hereto as Exhibit B and made a part hereof.

2. Subscriber shall pay monthly service fees, as outlined in Exhibit A of this Agreement, for connection and use of the Network. The first such fees shall be due within 30 days of the signing of this Agreement. Fees shall be invoiced on the fifteenth date of the calendar month and shall be paid within 30 days of the invoice date. Credit card payements will be processed on monthly basis and a statement of charges will be isssued to the Subscriber monthly. Failure to comply with the afore mentioned payment schedule may result in cancellation of network services.

3. General Atomics reserves the right to change the above terms and conditions by notifying the Subscriber in writing at least 30 days in advance.

4. Neither Party shall have the right to use the other's name, trademark or tradename or to refer to this Agreement in connection with any product, promotion, or publication without the prior written consent of the other Party.

5. No information exchanged between the Parties shall be considered confidential unless it is the subject of a separate written confidential non-disclosure agreement.

6. This Agreement will be effective upon signature by both Parties and may be terminated by either Party immediately upon written notice to the other Party provided, however, that the provisions of Paragraphs 7 and 8 shall survive any termination. Subscriber is thus responsible for any outstanding service fees.

7. General Atomics, any and all other participating CERFnet contractors and grantees, and CERFnet's directors, officers and employees are not authorized to make any affirmation of fact or warranty with respect to the software or hardware supplied under this Agreement and General Atomics HEREBY EXPRESSLY DISCLAIMS ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND INFRINGEMENT OF PROPRIETARY INTERESTS AND SHALL NOT BE LIABLE TO SUBSCRIBER FOR DIRECT, INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OF ANY KIND WHATSOEVER ARISING OUT OF OR RELATED TO THE USE OR INABILITY TO USE THE GENERAL ATOMICS HARDWARE OR SOFTWARE.

8. The Subscriber shall indemnify and hold General Atomics, their directors, officers, employees and agents harmless from and against any and all damages, liabilities, losses, costs and expenses, including reasonable attorney's fees, arising out of or related to SubscriberUs use of the Network or Subscriber's breach of the terms and conditions of this Agreement.

9. This Agreement and the legal relationships between the Parties shall be governed by the laws of the State of California.

10. This Agreement, including the CERFnet Acceptable Use Policy, is the sole Agreement between the Parties respecting the subject matter hereof. Subscriber has read this Agreement and fully understands the terms thereof. This Agreement supersedes all prior agreements and understandings, whether oral or written. This Agreement may only be changed or terminated in writing, signed by both Parties.

In witness whereof the Parties have caused their authorized representatives to sign in the space provided below.

General Atomics

By:
Title:
Date:

_____

By:
Title:
Date:

Ref: 8/5/92

EXHIBIT A
To DIAL n' CERF Subscription Agreement
Between General Atomics and

_____

CERFnet Dial Up Service Pricing

DIAL n' CERF Service Fees

Service Fees are assessed as follows:

One time installation fee (per organization)	$50.00
Monthly fee per user ID	$20.00
Hourly connect charge	
Weekday rate	$5.00
Weekend rate *	$3.00

DIAL n' CERF AYC Service Fees

Service Fees are assessed as follows:

One time installation fee (per organization)	$50.00
Monthly flat rate fee	$200.00

DIAL n' CERF USA (800 Number)

Service Fees are assessed as follows:

One time installation fee (per organization)	$50.00
Monthly fee with modem	$20.00
Hourly connect charge	
Weekday rate	$10.00
Weekend rate *	$8.00

* Weekend rate is from 5pm Friday through 5 pm Sunday

Ref: 8-25-92

EXHIBIT B
CERFnet - ACCEPTABLE USE POLICY
Between General Atomics and

_____

CERFnet - ACCEPTABLE USE POLICY

This statement represents a guide to the acceptable use of the CERFnet facilities.

(1) If data from any source leaves CERFnet and enters another network that data must follow the acceptable use rules of the entered network (including member networks, regional, or backbone networks). It is the responsibility of the member where this traffic enters CERFnet to meet this requirement.

(2) Any traffic which is disruptive from any source is prohibited.

(3) Commercial data may be exchanged if other party is a member of CIX (Commercial Internet Exchange), or any future commercial arrangements CERFnet may make. Subscriber is responsible for confirming that party receiving commercial data is a member of CIX or agrees with party's acceptable use policy. Failure to comply with these Policies and Procedures and Network usage rules may result in the termination of SubscriberUs membership.

Adopted January 11, 1993
Ref:1-11-93I

EXHIBIT C
CERFNET - DIAL n' CERF USER AUTHORIZATION
Between General Atomics and
_____

Principal User _____ Date: _____
Affiliation _____

Please provide the full names, addresses, telephone numbers of people you authorize to use DIAL n' CERF, including self. Please make sure to include a preferred user id, otherwise one will be assigned. (Make copies of this sheet if more space is needed.)

Please circle desired service: DIAL n' CERF DIAL n' CERF AYC

	NAME	ADDRESS	TELEPHONE #	PREFERRED USER ID (maximum 8 characters)
1.				
2.				
3.				

PAYMENT METHOD: (CHOOSE ONE OPTION)

___ Charge to my credit card: MasterCard or VISA (PLEASE CIRCLE)

Credit card no. _____

Expiration Date _____

Signature _____

___ Send formal invoice to the following address: (A PURCHASE ORDER IS REQUIRED)

_____

_____

_____

_____ _____
Signature of Principal User Date
(required for processing)

Please complete, sign, and return this form to:
CERFnet - A Division General Atomics
P. O. Box 85608

San Diego, CA 92186-9784
Attn: DIAL n' CERF Coordinator
(800) 876-CERF

INTERNET PROVIDER: EUNET

Company & Service Overview

- EUnet is a Europe-wide supplier of electronic network services.
  - Operates own infrastructure across Europe. Member countries forms nodes on the EUnet network.
  - Largest European component of the Internet.
  - Has over 8,000 customers and more than 10,000,000 users.
  - Member of CIX and Ebone 93, a research network consortium.
  - No specific target market for most EUnet services; customers span the spectrum of users.
  - EUnet Traveler, a new service, is targeted at traveling businessmen, executives, professionals, and other who need a way to access their own Internet host when traveling in Europe.
- EUnet provides both dial-up and leased line access to Internet.
  - Provides full complement of Internet services. Service packaging, options, and pricing are on a member country-by-country basis.
  - Provides (local) dial-up access to (remote) Internet-connected host systems from in 27 countries throughout Europe between Iceland and Vladivostock.

EUnet Services Summary

- ❒ EUnet services includes:
  - Internet Services:
    - EE-mail (Internet-style RFC 822 and X.400)
    - SLIP and PPP connectivity
    - Remote log-in
    - File transfer over dial-up, X.25, and ISDN lines
    - Network News
    - Internet Talk Radio
  - EUnet Traveler
    - Simply a local gateway which routes customers into their (Internet-connected) host computer. Customers communicate with the Internet via their own host system.
    - Limitations
      - o Not intended for bulk file transfers
      - o Does not support proprietary e-mail systems
- ❒ EUnet does not provide compensation for service problems.
- ❒ Dial-up Service/User Technical Requirements
  - PC with appropriate terminal emulation/communication software.
  - Locally approved modems and telephone connectors. Modem Requirements:
    - V.32/V.32bis, V.42, and V.42bis capable

EUnet Regular Dialup Services Summary - Belgium Example

Service	Description	Charges
EUnetBox	Provides a login and mailbox service • X.25 or regular dialup modem access • 300 - 19200 bps supported • Full Internet and CIX access including ftp, telnet, archie… • 5MB disk space allowed	Monthly Fee: 500 BEF for 3 hrs connection 6BEF/minute additional charge
EUnetMail	UUCP-based e-mail service. • X.25 or regular dialup modem access • 300 - 19200 bps supported • Access to EUnet Belgium archive is available free of charge	Monthly Fee: Organizations: 2,000 BEF/month Individuals: 500 BEF/month Mail Volume — BEF/kB: <4 MB / 4-6MB / >6MB EUnet Belgium (send): 1.5 / 1.45 / 1.4 Europe (send/receive): 2.5 / 2.4 / 2.3 Others (send/receive): 4.5 / 4.35 / 4.2
EUnetNews	UUCP-based USENET news service • X.25 or regular dialup modem access • 300 - 19200 bps supported	Monthly Fee: Organizations: 600 BEF/month Individuals: 400 BEF/month

Note: BEF - Belgium Franc

EUnet TCP/IP Services Summary - Belgium Example

Service	Description	Charges
DialEUnet	Provides dialup access EUnet's TCP/IP network and CIX. • X.25 or regular dialup modem access • Support speeds between 2400 bps to 76800 bps • Support SLIP, CSLIP, and PPP protocols • Include: - access to all networks reachable via InterEUnet - Mail routing (delivery by SMTP to customer site) - Running of a primary nameserver for customer domain on EUnet equipment - H/W and S/W to connect customer to EUnet site.	Flat Rate: One-time connection fee: 1,000 BEF Subscription fee: 20,000 BEF/mo. Connection Time Based: One-time connection fee: 1,000 BEF Subscription fee: 2,000 BEF/mo. Connection time fee: 6 BEF/minute
InterEUnet	Provides leased-line access to EUnet's TCP/IP network and CIX. • Access to all networks reachable via EUnet • Mail routing (delivery by SMTP to customer site) • Newsfeed via NNTP • Secondary nameserver for customer domain on EUnet equipment • All volume costs • H/W and S/W to enable leased-line connection at EUnet site.; router management. • Does not include - leased-line to EUnet - any third party charges, e.g. local PTT - customer premise H/W (router, DSU/CSU) and S/W - installation and configuration costs	Bandwidth / One-time Connection Fee / Monthly Fee 64 Kpbs 80,000 BEF 80,000 BEF <=19,200Kpbs 80,000BEF 50,000 BEF

Note: BEF - Belgium Franc

EUnet Amsterdam will at as a coordinator for lines; however PTT may take 3 months for a dedicated line. Amersterdam only a Central Point of contact for each EUnet country member.

EUnet Traveler Service Pricing

Sign Up Fee	ECU 30
Monthly Recurring Fee	ECU 30
Amount Of Usage	3 hrs
Additional Usage Charge	ECU 10/hr.
Additional Charges	17.5% VAT
Method Of Subscription	On-line
Method of Payment	Charge Card

----EUnet overview follows:

CONNECTING EUROPE SINCE 1982

EUnet is the largest inter-organisational data network in Europe, providing a wide range of network-based services to over ten thousand sites. Its geographic coverage extends far beyond Western Europe reaching most of Eastern Europe, including countries of the former Soviet Union, as well as North Africa. EUnet has links to the major commercial and research networks of the world and is a major European component of the global computer supernetwork, the Internet.

The operational hub of EUnet is its European Network Operations Centre based in Amsterdam, The Netherlands. From here are controlled the communications links which run to the local EUnet organisations in 27 countries and, via EUnet's North American associate, UUnet, to the rest of the world. Each National EUnet Service Provider offers its own local operations and customer support so that subscribers can always speak to a EUnet representative in their own language and in their own country.

EUnet was founded in 1982 by network experts linked to the European Unix Users Group, initially with the purpose of unifying the electronic mail systems employed by research institutes and universities across Europe. EUnet's services now range far beyond simple electronic mail. EUnet Network News offers worldwide information and discussion on topics ranging from business and finance through advanced scientific research to sport and recreation. This system is also used to distribute the commercial CLARInet service which includes up-to-the-minute news from major wire services. The EUnet Archive collects a range of public-domain or "shareware" software for a variety of computer systems to which subscribers have full access.

In 1990, EUnet introduced "full service" InterEUnet. Using the widely-adopted TCP/IP network protocols, InterEUnet provides direct computer-to-computer links across the globe for every kind of customer application. InterEUnet is not only a basic connectivity service (connecting LANs in different locations), but can be used simultaneously as a means of access to other EUnet services (such as mail or news), for bulk data transfer, remote login, or for any other networking application.

EUnet is the official distributor in Europe of Internet Talk Radio, an innovative computer-based digital radio programme which provides regular news and features about the Internet.

EUnet services can be used from a variety of computer equipment ranging from personal computers to large mainframes. The means of access to EUnet varies according to local telecommunications practice, but dial-up (using a telephone line and modem), leased line, X.25 and ISDN connections may all be available. EUnet prices are usually based on a subscription fee plus traffic- or bandwidth-dependent, usage charges: prices also vary from country to country. EUnet in Amsterdam can arrange one-stop shopping and central billing for customers requiring service in several countries.

EUnet European Office Address:

EUnet
Kruislaan 409
1098 SJ Amsterdam
The Netherlands

E-Mail: info@EU.net

TEL: +31 20 592 5109
FAX: +31 20 592 5163

EUnet provides networking and Internet-related services in 27 countries in the greater European region between Iceland and Vladivostok, and from above the Arctic Circle to as far South as Egypt. EUnet services include E-mail (RFC-822 and X.400), Network News, Archive Access and connectivity via leased lines, ISDN, dial-up, and X.25.

EUnet services are available in France, Germany, Belgium and Spain. At this time all prices are quoted by our national service providers. I am Cc'ing this letter and will have them send you their standard price list and services description.

In general you may obtain such information from EUnet national service providers by sending queries to "info@<country>.eu.net".

For your information I have enclosed an overview of EUnet. Please contact us at "info@eu.net" (which is read by several of us here in Amsterdam) if you do not obtain a quick reply to your inquiry or if we can be of further assistance.

regards,

Job

----you asked:

My company is looking for Internet access in France, Germany, Belgium and Sp
We would like to receive as much info as possible on services, prices and ot
relevant materials.

Please contact:

Edward Diamond
Linden Corporation
fax: +1 201 993 98 66
voice: +1 201 605 53 40

---- Country contact information follows:

EUnet Contact-Information for France (Fnet):

Address :

Fnet, EUnet-France
11 Rue Carnot
94270 Le Kremlin Bicetre, France

Contact :

M. Laurent Bloch
Phone : +33 1 45 21 02 04
Fax : +33 1 46 58 94 20
E-mail : info@France.EU.net

EUnet Contact-Information for Germany (EUnet Germany):

Address :

EUnet Deutschland GmbH
Emil-Figge-Str. 80
D-44227 Dortmund

Contact :

Sales Department
Phone : +49 231 972 00
Fax : +49 231 972 1111
E-mail : info@Germany.EU.net

EUnet Contact-Information for Belgium (EUnet Belgium):

Address :

EUnet Belgium NV/SA
Stapelhuisstraat 13
B-3000 Leuven, Belgium

Contact :

Phone : +32 16 23 60 99
Fax : +32 16 23 20 79
E-mail : info@Belgium.EU.net

EUnet Contact-Information for Spain ():

Address :

Goya Servicios Telematicos SA -- EUnet Espana
Clara del Rey 8, 1-7
E-28002 Madrid, Spain

Contact :

Support Group
Phone : +34 1 413 48 56

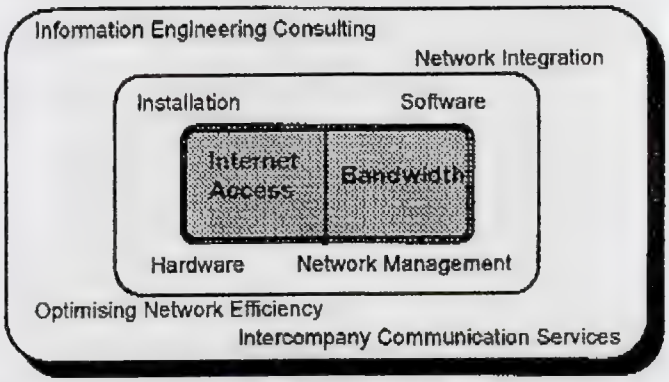
EUnet Belgium

EUnet Belgium was founded in December 1993 and is the node of EUnet in Belgium. It is operating as an independent company. The founders and collaborators are all specialist in Unix, networking and electronic mail.

Our very first mission is giving you high quality access to the Internet and its wealth of information resources. EUnet is providing you therefore with an up-to-date network infrastructure, which is expanding through Belgium at this very moment. New access points (POPs, Points of Presence) will be put in place very soon. You can access us via modems, leased lines, X.25 and - as soon as available by Belgacom - Euro ISDN. We are operating from Leuven, which has been chosen for being close to the center of Belgium and for being a creative and innovative place thanks to the University. Please note that our people have a long tradition in Internet technology and are able to deliver you the highest quality that can be found on the Belgian market.

EUnet Belgium can offer you complete Internet solutions, including hardware (modems, routers, ...), software (shareware, mailing solutions, ...), integrated solutions (gateways to other mailing systems, EDI) and consulting (security, information engineering, ...). It is not our goal to give you "raw" Internet access : we want to deliver communication and information capabilities as added value.

We will also function as an information node for our customers. Via our tools available on our host computer, professionals, hobbyists and companies will be able to retrieve quickly the information they need. We will point out for them the resources available on the Internet in which they can look for information or participate in discussions.



As specialists in electronic mailing and in information retrieval, we will be happy to help you or your company to set up your own information network. This can start from the hardware, choice of network facilities up to the implementation of retrieval tools and classification of sources of data, facts and figures.

For all further information, please contact us

by telephone : 016/23 60 99
by fax : 016/23 20 79
by e-mail : info@Belgium.EU.net

EUnet Belgium N.V.
Stapelhuisstraat 13
3000 Leuven
Tel : 016/23 60 99
Fax : 016/23 20 79
info@Belgium.EU.net

EUNET BELGIUM - INFORMATION PACK

EUnet Belgium offers you a wide range of computer communications. We offer you the possibility to communicate easily nationally and internationally, between organizations or within organizations. You can search for information all over the worldwide Internet about the most different subjects : from agriculture over politics to Information Technology.

EUnet Belgium offers full Internet services to the commercial community and to private persons in Belgium.

This Information Pack gives only a short outline of the services available, and details their practical applications and benefits. Please read through it carefully and phone or mail us to arrange further discussions or a visit, in order to examine in more specific detail the unique needs of your particular requirements.

We first start with an introduction to Internet and EUnet.

The Internet

Internet is a collection of networks throughout the world. All these networks are connected to each other and they all use the same communication protocol, i.e. TCP/IP. This permits all machines connected to one of these networks to communicate with each other. The total number of computers connected in the world is now about 2.000.000 and the number of hosts connected to the Internet is doubling each year. The Internet has become popular for its ease of use of electronic mail : knowing the e-mail address of someone, you can mail messages all over the world. But next to this communication mechanism, Internet is known for its sources of free information. Fileservers all over the world can be reached to ask for the latest updates on programs, sources (free- or shareware), but also on agriculture, the Dow Jones or movies. Most of this information is for free.

Internet is also a very democratic society : you can discuss via News on almost any subject you can think of in an interactive way. News contains 2000 different subjects.

EUnet

EUnet is the largest European Internet Network, connecting 27 countries in Europe and North Africa. This includes the EEC, the Scandinavian countries, Austria, Bulgaria, the Czech Republic, Slovakia, Hungary, Slovenia and also Tunisia and the ex-USSR.

EUnet exists since 1982 and is a professionally run organization, supporting reliable connections (uptime is over 99 %). EUnet has over 8 000 customers and more than 10 000 000 users. The growth rate is 25 % on a yearly basis.

EUnet Belgium NV
Products & Prices
Version: 06/01/94

%%%%%%%%%%%%%%%%%%%%%%%%%%%%
General Terms and Conditions
%%%%%%%%%%%%%%%%%%%%%%%%%%%%

- Products and prices are valid from January 3rd, 1994. Availability and pricing subject to change without notice.
- All prices are net prices, 20,5% VAT not included.
- Prices marked with (*) are subject to a 20% discount for members of the B.U.U.G. (Belgian Unix systems User Group).

  B.U.U.G. VZW
  c/o VUB ETRO/IRIS
  Pleinlaan 2
  B-1050 Brussel
  Tel: +32 2 6412930
  Fax: +32 2 6412883
  BUUG@Belgium.EU.net

- Where reference is made to 'organizations', all non-individual legal entities are meant (BVBA/SPRL, CV/SC, NV/SA, ASBL/VZW,...), as opposed to a 'natural person' or individual, in the legal sense of the word.
- Invoicing is done on a monthly base. One-time connection fees and subscription fees are to be paid in advance. Volume fees and connection time based fees are charged according to volume or connection time used and invoiced the month following usage of the service. Invoices are to be paid within 30 days after the invoice date.
- EUnet Belgium NV does not accept any liability whatsoever that may arise out of any use whatsoever of products or services in this list mentioned.
- For all info on EUnet Belgium products and services:

  EUnet Belgium NV/SA
  Stapelhuisstraat 13
  B-3000 Leuven
  Tel: +32 16 236099
  Fax: +32 16 232079
  info@Belgium.EU.net

%%%%%%%%
EUnetBox
%%%%%%%%

Description

EUnetBox is EUnet's entry-level product and provides a login and mailbox service. Access to reading News is also provided.

EUnetBox can be accessed via X.25 (DCS) or regular dialup modem connections. Speeds between 300 and 19200 bps are supported.

Full access to the Internet and the CIX is available (ftp, telne archie,...).

Files can be up- and downloaded with Kermit or X-, Y- en Z-modem protocols. We provide a wealth of choice of files in our archiv

5 MB of disk quota is provided in this service.

Charges

EUnetBox is charged against a fixed monthly subscription fee of 500,- BEF, which includes 3 hours of connection time. Additional connection time is charged at 6,- BEF/minute. In addition, there is a mail volume fee, charged against the following rates:

Mail volume fees:

Destination/Source	BEF per kB
EUnet Belgium (send only)	0,50
Europe (send and receive)	1,50
Others (send and receive)	2,50

Specific Terms and Conditions

- The minimum subscription period is 1 month. One month notice is required to unsubscribe.

%%%%%%%%
UnetMail
%%%%%%%%

escription

EUnetMail is EUnet's UUCP (Unix to Unix CoPy) based e-mail service. Access to EUnetMail is provided via X.25 (DCS) or regular dialup modem connections. Speeds between 300 and 19200 bps are supported.

Besides e-mail, access to the EUnet Belgium archive is available for EUnetMail subscribers through a mail server, free of charge.

harges

EUnetMail is charged against a fixed monthly subscription fee and a volume based fee.

Subscription fee:

Organizations	2.000,- BEF per month (*)
Individuals	500,- BEF per month (*)

Mail volume fees:

Destination/Source	BEF per kB		
	<4 MB	4 MB..6 MB	>6 MB
EUnet Belgium (send only)	1,50	1,45	1,40
Europe (send and receive)	2,50	2,40	2,30
Others (send and receive)	4,50	4,35	4,20

ost Example

100 messages/month (average 2 kB) sent within Belgium;
100 messages/month (average 2 kB) sent within Europe;
100 messages/month (average 2 kB) sent to the USA and Japan;

subscription fee: 2.000,- BEF (organization, e.g.),
mail volume charge: (100 x 2 x 1,50 BEF) +
(100 x 2 x 2,50 BEF) +
(100 x 2 x 4,50 BEF) = 1.700,- BEF,
and your phone costs (in worst case: 600 kB/600 sec or 90 BEF)

pecific Terms and Conditions

- The subscription fee includes a connection to EUnet with a regular dialup modem or DCS (X.25) and access to online assistance by telephone between 10.00 h and 12.00 h during working days.
- Volume fees are charged on the actual size of the message inclusive of any headers, once per destination host.
- The minimum subscription period is 3 months.
  One month notice is required to unsubscribe.

%%%%%%%%%
EUnetNews
%%%%%%%%%

Description

EUnetNews is EUnet's UUCP (Unix to Unix CoPy) based USENET/EUnet Nev service. Access to EUnetNews is via X.25 (DCS) or regular dialup mod connections. Speeds between 300 and 19200 bps supported.

Charges

EUnetNews is charged against a fixed monthly subscription fee. There is no volume charge.

Subscription fee:

Organizations	600,- BEF per month (*)
Individuals	400,- BEF per month (*)

Specific Terms and Conditions

- The subscription fee gives you a connection to EUnet with a regula dialup modem or DCS (X.25) and access to all News available by EUr
- News may not be distributed to other organizations or individuals without the written agreement from EUnet Belgium NV.
- The minimum subscription period is 3 months.
  One month notice is required to unsubscribe.

%%%%%%%%
ialEUnet
%%%%%%%%

escription

DialEUnet provides dialup access to InterEUnet. InterEUnet is EUnet's Europe-wide TCP/IP network with connections to the Internet and CIX.

DialEUnet connections can be made by regular dialup modems or X.25. The available bandwidth for modem connections may vary, with the amount of compression possible, between 2400 bps and 76800 bps (theoretical upper limit). We support SLIP, CSLIP and PPP as link level protocols.

For connections over X.25 (DCS), we charge our corresponding DCS costs to the customer. These are the costs charged to EUnet Belgium, by the local PTT (Belgacom), for the connection to the customer's X.25 NUA. (A copy of our Belgacom DCS invoice will be added to the invoice).

DialEUnet fees include:

+ Access to all networks reachable via InterEUnet, as far as acceptable use policies allow this.
+ Mail routing via a EUnet backbone machine (delivery is done via SMTP to your site).
+ Running of a (primary) nameserver for your domain on our equipment for a limited number of hosts.
+ The hardware (and software) to connect you at the EUnet side.

harges

Two charging schemes are available: flat rate or connection time based.

a) Flat rate (X.25 or modem): (max. 2 h/day/month)

One-time connection fee	1.000,- BEF
Subscription fee	20.000,- BEF per month

b) Connection time based (modem only):

One-time connection fee	1.000,- BEF
Subscription fee	2.000,- BEF per month
Connection time fee	6,- BEF per minute

ost Example

Connection time based, modem V.32bis, transfer of data to or from any Internet site worldwide. Estimated effective throughput: 1200 cps.

EUnet cost per kB:	0,083	BEF
Belgacom cost per kB:	0,124	BEF (maximum charge)
Total cost per kB:	0,207	BEF
Total cost per MB:	207,-	BEF

Actual throughput and cost may vary due to line loads in the Internet.

pecific Terms and Conditions

- o The subscription fee includes a connection to EUnet with a regular dialup modem or DCS (X.25) and access to online assistance by telephone between 10.00 h and 12.00 h during working days.
- o The minimum subscription period is 3 months. One month notice is required to unsubscribe.

%%%%%%%%%%
InterEUnet
%%%%%%%%%%

Description

InterEUnet is EUnet's Europe-wide TCP/IP network with connections to the Internet and CIX (Commercial Internet Exchange). This product sh refers to a connection via leased line(s). To connect to InterEUnet via dialup, please refer to our DialEUnet product.

InterEUnet fees include:

+ Access to all networks reachable via InterEUnet, as far as acceptable use policies allow this.
+ Mail routing via a EUnet backbone machine (delivery is done via SMTP to your site).
+ Newsfeed via NNTP from a EUnet backbone site.
+ Running of a secondary nameserver for your domain on our equipment
+ All volume costs.
+ The hardware (and software) to connect your leased line at the EUnet side.

InterEUnet fees do NOT include:

- The leased line to EUnet.
- Any charges levied for services by third parties.
- Hardware and software on your premises.
- Installation and configuration costs.

Charges

All charges are split into a one-time connection fee and regular monthly fees. The one-time fee covers our installation and setup costs for the connection, the monthly subscription fees cover the use of the EUnet infrastructure.

Bandwidth bps (nominal)	One-time connection fee	Monthly subscription fee
64k	80.000 BEF	80.000 BEF
<=19200	80.000 BEF	50.000 BEF

Specific Terms and Conditions

- o The subscription fee includes access to online assistance by telephone between 10.00 h and 12.00 h during working days.
- o The minimum subscription period is one year. Six months notice is required to unsubscribe.

Die EUnet Deutschland GmbH
Leistungsbeschreibung

1. Oktober 1992

Gebührenstruktur

Für die Dienstleistungen der EUnet Deutschland GmbH werden drei Gebührenarten berechnet:

I. eine monatliche
Grundgebühr 75,00 DM
für GUUG Mitglieder[1] 50,00 DM

II. monatliche Bereitstellungsgebühren pro Dienst (Mail, News oder InterEUnet)

III. Volumengebühren für pro Monat anfallende oder gebuchte Verkehrsvolumina

Alle in dieser Leistungsbeschreibung aufgeführten Tarife verstehen sich zuzüglich der gesetzlichen Umsatzsteuer. Als Abrechnungszeitraum gilt der Monat.

Electronic-Mail

I. Leistungsbeschreibung

(1) Die Dienstleistung Electronic-Mail (E-Mail) ermöglicht dem Teilnehmer den Austausch von Nachrichten im Store-and-forward Verfahren auf der Basis international anerkannter technischer Normen.

(2) Die EUnet Deutschland GmbH stellt im Rahmen ihrer betrieblichen Möglichkeiten Gateways zu anderen Netzen zur Verfügung. Ein Anspruch auf die Einrichtung oder den Weiterbetrieb von Gateways besteht nicht.

II. Tarifierungsgrundsätze

(1) Für die Nutzung des Dienstes Electronic-Mail ist eine monatliche Bereitstellungsgebühr zu entrichten. Darüberhinaus werden für internationalen Mail-Verkehr – d.h. die Übermittlung von Nachrichten über Wege außerhalb der Bundesrepublik Deutschland – Verkehrsgebühren erhoben.

(2) Die Bemessungsgrundsätze für Verkehrsgebühren orientieren sich an dem Kommunikationsverhalten des Kunden. Zu diesem Zweck wird der Teilnehmer nach dem Verhältnis des Volumens von empfangenen zu dem Gesamtvolumen der Nachrichten in Klassen eingestuft. Das Volumen einer Nachricht bemißt sich nach der Summe der Größen von Nachrichtenkopf (Header) und Inhalt (Body).

[1] GUUG Mitglieder können die Dienstleistungen der EUnet Deutschland GmbH zu Sonderkonditionen beziehen.

(3) In allen Klassen mit Ausnahme der Klasse 5 gilt der Grundsatz, daß Verkehrsgebühren nur für gesendete Nachrichten erhoben werden. In der höchsten Klasse, in die Teilnehmer eingestuft werden,

- deren Gesamtvolumen in einem Abrechnungszeitraum 25 kByte überschreitet, und
- die selbst in vergleichsweise geringem Umfang Nachrichten versenden,

werden Verkehrsgebühren sowohl für gesendete wie für empfangene Nachrichten erhoben.

(4) Die Einstufung gilt jeweils für den nächsten Abrechnungszeitraum; eine erstmalige Einstufung erfolgt rückwirkend am Ende des ersten Abrechnungszeitraumes. Verändert sich das Kommunikationsverhalten des Teilnehmers, wird er dementsprechend zum Ende eines Abrechnungszeitraums in die jeweils nächsthöhere oder nächsttiefere Klasse eingestuft.

(5) Von den Grundsätzen der Abs. 2-4 abweichend kann ein bestimmtes Volumenkontingent zu einem festen Tarif vorbestellt werden. Die dafür festgesetzte Gebühr ist auch zu entrichten, wenn das Volumenkontingent vom Teilnehmer nicht in vollem Umfang in Anspruch genommen wird. Bei Überschreitung des Volumenkontingents bemessen sich die darüber hinausgehenden Gebühren entsprechend dem KiloByte–Preis für das vorbestellte Volumenkontingent. Bei dem vorbestellten Volumenkontingent wird sowohl ein- wie ausgehende Mail berechnet.

III. Tarife

Bereitstellungsgebühr: 35.00 DM
für GUUG-Mitglieder 25.00 DM

Verkehrsgebühren:

Klasse	Anteil empfangen	DM/kB
1	[0% – 55%]	0.45
2	[55% – 78%]	1.35
3	[78% – 89%]	3.15
4	[89% – 94%]	6.75
5	[94% – 100%]	0.25

In der höchsten Tarifklasse (5) werden Verkehrsgebühren sowohl für gesendete als auch für empfangene Nachrichten erhoben.

Kontingente: laut Anhang A

NetNews

I. Leistungsbeschreibung

(1) Die Dienstleistung NetNews (News) ist ein verteiltes Gruppenkommunikations-Instrument. NetNews ermöglicht den Austausch von Nachrichten („Artikeln") in einer dem Dienst Electronic-Mail vergleichbaren Weise. Die Artikel werden an alle Rechner innerhalb- und außerhalb des von der EUnet Deutschland GmbH betriebenen Netzes weitergeleitet, die zum Zeitpunkt des Versands („Posting") oder unmittelbar danach die entsprechende Gruppe („Newsgroup") abonniert haben und so einem dispersen Publikum zugänglich gemacht.

(2) Die EUnet Deutschland GmbH übermittelt ihren Kunden Artikelgruppen mit weltweiter, europäischer und deutscher Verbreitung. Im Rahmen ihrer betrieblichen Möglichkeiten wird die EUnet Deutschland GmbH weitere Gruppen anbieten. Ein Anspruch auf die Bereitstellung bestimmter Gruppen, die Weiterleitung von Artikeln über den Bereich des deutschen EUnet hinaus oder die Zustellung von Artikeln, die außerhalb des deutschen EUnet gepostet wurden, besteht nicht.

II. Tarifierungsgrundsätze

Für die Nutzung des Dienstes NetNews ist eine monatliche Bereitstellungsgebühr zu entrichten.

III. Tarife

Bereitstellungsgebühr: 90.00 DM
für GUUG-Mitglieder 60.00 DM

(3) Sollte das festgesetzte Verkehrsvolumen in drei aufeinander folgenden Monaten um mehr als 20werden, kann EUnet den Anschluß des betroffenen VPN-Teilnehmers sperren, bis mit ihm eine seiner Nutzung entsprechende Individualvereinbarung getroffen worden ist.

(4) Drittkosten - insbesondere Gebühren, die von der DBP-Telekom als Entgelt für die Verbindung zwischen dem VPN-Teilnehmer und dem von ihm genutzen Einwahlpunkt (EUnet-RZ, POP) erhoben werden - gehen zu dessen Lasten. Sofern die Gebühren gegenüber EUnet erhoben werden, sind sie vom VPN-Teilnehmer zu erstatten.

A Mail-Volumenkontingente

In diesem Anhang ist eine Tabelle der Mail-Volumenkontingente wiedergegeben. Sollte ein von Ihnen gewünschte Kontingent nicht aufgeführt sein, so kann der Preis bei der EUnet Deutschland GmbH erfragt werden.

0.00	1.00K	2.00K	3.00K	4.00K	5.00K	6.00K	7.00K	8.00K	9.00K
0.00	0.22	0.45	0.67	0.90	1.12	1.34	1.57	1.79	2.02
10.00K	11.00K	12.00K	13.00K	14.00K	15.00K	16.00K	17.00K	18.00K	19.00K
2.24	2.46	2.68	2.91	3.13	3.35	3.58	3.80	4.02	4.24
20.00K	22.00K	24.00K	26.00K	28.00K	30.00K	32.00K	34.00K	36.00K	38.00K
4.46	4.91	5.35	5.79	6.24	6.68	7.12	7.56	8.00	8.44
40.00K	44.00K	48.00K	52.00K	56.00K	60.00K	64.00K	68.00K	72.00K	76.00K
8.88	9.75	10.62	11.50	12.37	13.24	14.10	14.96	15.83	16.69
80.00K	88.00K	96.00K	104.00K	112.00K	120.00K	128.00K	136.00K	144.00K	152.00K
17.54	19.25	20.96	22.65	24.34	26.02	27.69	29.35	31.01	32.66
160.00K	176.00K	192.00K	208.00K	224.00K	240.00K	256.00K	272.00K	288.00K	304.00K
34.30	37.56	40.80	44.00	47.18	50.33	53.46	56.56	59.64	62.68
320.00K	352.00K	384.00K	416.00K	448.00K	480.00K	512.00K	544.00K	576.00K	608.00K
65.71	71.69	77.58	83.37	89.08	94.70	100.24	105.71	111.09	116.40
640.00K	704.00K	768.00K	832.00K	896.00K	960.00K	1.02M	1.09M	1.15M	1.22M
121.64	131.91	141.92	151.68	161.21	170.52	179.62	188.52	197.23	205.77
1.28M	1.41M	1.54M	1.66M	1.79M	1.92M	2.05M	2.18M	2.30M	2.43M
214.14	230.40	246.08	261.25	275.93	290.17	304.02	317.50	330.64	343.48
2.56M	2.82M	3.07M	3.33M	3.58M	3.84M	4.10M	4.35M	4.61M	4.86M
356.02	380.33	403.72	426.32	448.22	469.50	490.25	510.51	530.35	549.81
5.12M	5.63M	6.14M	6.66M	7.17M	7.68M	8.19M	8.70M	9.22M	9.73M
568.92	606.23	642.53	677.96	712.69	746.80	780.39	813.53	846.28	878.68
10.24M	11.26M	12.29M	13.31M	14.34M	15.36M	16.38M	17.41M	18.43M	19.46M
910.79	974.24	1036.84	1098.76	1160.12	1221.02	1281.54	1341.72	1401.64	1461.31
20.48M	22.53M	24.58M	26.62M	28.67M	30.72M	32.77M	34.82M	36.86M	38.91M
1520.77	1639.18	1757.02	1874.42	1991.46	2108.21	2224.73	2341.04	2457.18	2573.18
40.96M	45.06M	49.15M	53.25M	57.34M	61.44M	65.54M	69.63M	73.73M	77.82M
2689.06	2920.50	3151.62	3382.48	3613.13	3843.63	4073.98	4304.23	4534.39	4764.46
81.92M	90.11M	98.30M	106.50M	114.69M	122.88M	131.07M	139.26M	147.46M	155.65M
4994.47	5454.31	5913.98	6373.51	6832.93	7292.26	7751.52	8210.73	8669.88	9129.00

A.1 Mail-Kontingentpreise

Bei den in Anhang A aufgeführten Kontingenten wird ein Kilobyte internationaler E-Mail zu folgenden Preisen transportiert[1]:

0.00	1.00K	2.00K	3.00K	4.00K	5.00K	6.00K	7.00K	8.00K	9.00K
0.2246	0.2245	0.2244	0.2244	0.2243	0.2242	0.2242	0.2241	0.2240	0.2240
10.00K	11.00K	12.00K	13.00K	14.00K	15.00K	16.00K	17.00K	18.00K	19.00K
0.2239	0.2238	0.2238	0.2237	0.2236	0.2235	0.2235	0.2234	0.2233	0.2233
20.00K	22.00K	24.00K	26.00K	28.00K	30.00K	32.00K	34.00K	36.00K	38.00K
0.2232	0.2231	0.2229	0.2228	0.2227	0.2226	0.2224	0.2223	0.2222	0.2220
40.00K	44.00K	48.00K	52.00K	56.00K	60.00K	64.00K	68.00K	72.00K	76.00K
0.2219	0.2216	0.2214	0.2211	0.2208	0.2206	0.2203	0.2201	0.2198	0.2196
80.00K	88.00K	96.00K	104.00K	112.00K	120.00K	128.00K	136.00K	144.00K	152.00K
0.2193	0.2188	0.2183	0.2178	0.2173	0.2168	0.2163	0.2158	0.2153	0.2148
160.00K	176.00K	192.00K	208.00K	224.00K	240.00K	256.00K	272.00K	288.00K	304.00K
0.2144	0.2134	0.2125	0.2116	0.2106	0.2097	0.2088	0.2079	0.2071	0.2062
320.00K	352.00K	384.00K	416.00K	448.00K	480.00K	512.00K	544.00K	576.00K	608.00K
0.2053	0.2037	0.2020	0.2004	0.1988	0.1973	0.1958	0.1943	0.1929	0.1914
640.00K	704.00K	768.00K	832.00K	896.00K	960.00K	1.02M	1.09M	1.15M	1.22M
0.1901	0.1874	0.1848	0.1823	0.1799	0.1776	0.1754	0.1733	0.1712	0.1692
1.28M	1.41M	1.54M	1.66M	1.79M	1.92M	2.05M	2.18M	2.30M	2.43M
0.1673	0.1636	0.1602	0.1570	0.1540	0.1511	0.1484	0.1459	0.1435	0.1412
2.56M	2.82M	3.07M	3.33M	3.58M	3.84M	4.10M	4.35M	4.61M	4.86M
0.1391	0.1351	0.1314	0.1281	0.1251	0.1223	0.1197	0.1173	0.1151	0.1130
5.12M	5.63M	6.14M	6.66M	7.17M	7.68M	8.19M	8.70M	9.22M	9.73M
0.1111	0.1076	0.1046	0.1018	0.0994	0.0972	0.0953	0.0935	0.0918	0.0903
10.24M	11.26M	12.29M	13.31M	14.34M	15.36M	16.38M	17.41M	18.43M	19.46M
0.0889	0.0865	0.0844	0.0825	0.0809	0.0795	0.0782	0.0771	0.0760	0.0751
20.48M	22.53M	24.58M	26.62M	28.67M	30.72M	32.77M	34.82M	36.86M	38.91M
0.0742	0.0728	0.0715	0.0704	0.0694	0.0686	0.0679	0.0672	0.0666	0.0661
40.96M	45.06M	49.15M	53.25M	57.34M	61.44M	65.54M	69.63M	73.73M	77.82M
0.0656	0.0648	0.0641	0.0635	0.0630	0.0626	0.0622	0.0618	0.0615	0.0612
81.92M	90.11M	98.30M	106.50M	114.69M	122.88M	131.07M	139.26M	147.46M	155.65M
0.0610	0.0605	0.0602	0.0598	0.0596	0.0593	0.0591	0.0590	0.0588	0.0586

[1] Bitte beachten Sie, daß die Preise auf 1/100 Pfennig gerundet sind

B Internet-Volumenkontingente

In diesem Anhang ist eine Tabelle der Internet-Volumenkontingente wiedergegeben. Sollte ein von Ihnen gewünschte Kontingent nicht aufgeführt sein, so kann der Preis bei der EUnet Deutschland GmbH erfragt werden:

0.00	1.00M	2.00M	3.00M	4.00M	5.00M	6.00M	7.00M	8.00M	9.00M
0.00	43.34	76.65	103.24	125.11	143.54	159.37	173.20	185.47	196.47
10.00M	11.00M	12.00M	13.00M	14.00M	15.00M	16.00M	17.00M	18.00M	19.00M
206.45	215.58	224.01	231.85	239.18	246.08	252.60	258.79	264.70	270.36
20.00M	22.00M	24.00M	26.00M	28.00M	30.00M	32.00M	34.00M	36.00M	38.00M
275.80	286.10	295.77	304.92	313.64	322.00	330.07	337.88	345.48	352.88
40.00M	44.00M	48.00M	52.00M	56.00M	60.00M	64.00M	68.00M	72.00M	76.00M
360.13	374.20	387.82	401.08	414.06	426.80	439.35	451.73	463.98	476.10
80.00M	88.00M	96.00M	104.00M	112.00M	120.00M	128.00M	136.00M	144.00M	152.00M
488.13	511.92	535.45	558.76	581.90	604.91	627.80	650.60	673.33	695.98
160.00M	176.00M	192.00M	208.00M	224.00M	240.00M	256.00M	272.00M	288.00M	304.00M
718.58	763.64	808.54	853.33	898.03	942.65	987.22	1031.73	1076.20	1120.64
320.00M	352.00M	384.00M	416.00M	448.00M	480.00M	512.00M	544.00M	576.00M	608.00M
1165.04	1253.78	1342.44	1431.03	1519.58	1608.09	1696.57	1785.02	1873.46	1961.87
640.00M	704.00M	768.00M	832.00M	896.00M	960.00M	1.02G	1.09G	1.15G	1.22G
2050.26	2227.02	2403.74	2580.42	2757.08	2933.72	3110.35	3286.96	3463.56	3640.15
1.28G	1.41G	1.54G	1.66G	1.79G	1.92G	2.05G	2.18G	2.30G	2.43G
3816.74	4169.88	4523.01	4876.12	5229.22	5582.31	5935.39	6288.46	6641.53	6994.60
2.56G	2.82G	3.07G	3.33G	3.58G	3.84G	4.10G	4.35G	4.61G	4.86G
7347.66	8053.77	8759.87	9465.96	10172.04	10878.12	11584.20	12290.27	12996.34	13702.41
5.12G	5.63G	6.14G	6.66G	7.17G	7.68G	8.19G	8.70G	9.22G	9.73G
14408.48	15820.60	17232.73	18644.84	20056.96	21469.07	22881.18	24293.29	25705.40	27117.50

B.1 Internet-Kontingentpreise

Bei den in Anhang B aufgeführten Kontingenten wird ein Kilobyte internationalem IP-Verkehr zu folgenden Preisen transportiert[2]:

0.00	1.00M	2.00M	3.00M	4.00M	5.00M	6.00M	7.00M	8.00M	9.00M
0.0500	0.0433	0.0383	0.0344	0.0313	0.0287	0.0266	0.0247	0.0232	0.0218
10.00M	11.00M	12.00M	13.00M	14.00M	15.00M	16.00M	17.00M	18.00M	19.00M
0.0206	0.0196	0.0187	0.0178	0.0171	0.0164	0.0158	0.0152	0.0147	0.0142
20.00M	22.00M	24.00M	26.00M	28.00M	30.00M	32.00M	34.00M	36.00M	38.00M
0.0138	0.0130	0.0123	0.0117	0.0112	0.0107	0.0103	0.0099	0.0096	0.0093
40.00M	44.00M	48.00M	52.00M	56.00M	60.00M	64.00M	68.00M	72.00M	76.00M
0.0090	0.0085	0.0081	0.0077	0.0074	0.0071	0.0069	0.0066	0.0064	0.0063
80.00M	88.00M	96.00M	104.00M	112.00M	120.00M	128.00M	136.00M	144.00M	152.00M
0.0061	0.0058	0.0056	0.0054	0.0052	0.0050	0.0049	0.0048	0.0047	0.0046
160.00M	176.00M	192.00M	208.00M	224.00M	240.00M	256.00M	272.00M	288.00M	304.00M
0.0045	0.0043	0.0042	0.0041	0.0040	0.0039	0.0038	0.0038	0.0037	0.0037
320.00M	352.00M	384.00M	416.00M	448.00M	480.00M	512.00M	544.00M	576.00M	608.00M
0.0036	0.0036	0.0035	0.0034	0.0034	0.0034	0.0033	0.0033	0.0032	0.0032
640.00M	704.00M	768.00M	832.00M	896.00M	960.00M	1.02G	1.09G	1.15G	1.22G
0.0032	0.0032	0.0031	0.0031	0.0031	0.0030	0.0030	0.0030	0.0030	0.0030
1.28G	1.41G	1.54G	1.66G	1.79G	1.92G	2.05G	2.18G	2.30G	2.43G
0.0030	0.0030	0.0029	0.0029	0.0029	0.0029	0.0029	0.0029	0.0029	0.0029
2.56G	2.82G	3.07G	3.33G	3.58G	3.84G	4.10G	4.35G	4.61G	4.86G
0.0029	0.0029	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028
5.12G	5.63G	6.14G	6.66G	7.17G	7.68G	8.19G	8.70G	9.22G	9.73G
0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028

[2]Bitte beachten Sie, daß die Preise auf 1/100 Pfennig gerundet sind

Instrucciones para rellenar el contrato EUnet.

La contratación de las soluciones corporativas *EUnet* se realiza mediante el formulario adjunto, a rellenar por duplicado, que incluye tanto datos técnicos sobre los servicios de valor añadido *EUnet* como datos administrativos tales como dirección de facturación, domiciliación de pago, etc. El formulario ha de firmarse así como las condiciones generales.

EUnet reserva a cada cliente corporativo un dominio único a nivel mundial, que se utilizará para componer las direcciones de correo electrónico de los miembros de la organización y para nombrar las máquinas de la red corporativa que se encuentren conectadas a Internet. Este dominio suele corresponder al acrónimo de la organización contratante. Por ejemplo, *EUnet* utiliza en España el dominio *eunet.es*

EUnet requiere que cada organización contratante de sus servicios defina dos personas de contacto, responsables de todo asunto técnico o administrativo, según corresponda.

El responsable administrativo ejerce el papel de representante del cliente para cualquier alta, cambio o rescisión de contrato de servicios *EUnet*. Estos cambios deberán comunicarse a *EUnet* por escrito o por mensajería electrónica desde la dirección del responsable administrativo. Su dirección de correo de superficie será la utilizada por *EUnet* como dirección de facturación.

El responsable técnico atenderá la dirección electrónica *postmaster* del dominio registrado mediante este contrato, dirección que *EUnet* utiliza para informar de todos los asuntos técnicos relacionados con el servicio.

El contratante del servicio deberá decidir si desea la recepción de un informe periódico sobre la utilización de correo electrónico. *EUnet* sirve este informe con dos niveles de detalle: resumen global a la compañía o resumen detallado de los mensajes servidos por Goya.

Por último, si tiene cualquier duda a la hora de rellenar el contrato, no dude en llamarnos.

Goya Servicios Telemáticos

EUnet
Connecting Europe since 1982

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Servicios proporcionados por EUnet en España:
---

nivel de integración	tipo de usuario personal	corporativo
básica	MyEUnetLink	EUnetLink
media	MyEUnetBox	
avanzada	MyEUnetDial	EUnetDial
plena		InterEUnet

* EUnetLink -- enlace a Internet, correo y noticias
* EUnetBox -- cuenta en Internet
* EUnetDial -- enlace eventual a Internet
* InterEUnet -- enlace permanente a Internet

NOTAS
=====

A efectos de cargos en mensajería, los dominios
.com, .edu, .mil y .org
se tratan como intercontinentales.

En los mensajes, se intenta cargar al remitente;
si no se pudiera, se le carga al destinatario.

Todas las cifras presuponen que el nodo siempre llama a Goya.

News

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Las noticias de *EUnet*, NEWS, constituyen un servicio mundial de intercomunicación. Es un sistema de conferencias que permite participar en más de 2000 conferencias que agrupan a expertos en muy diversas áreas. Una conferencia es un foro multimedia por el que se intercambia información de muy diferente naturaleza: opiniones, estudios, cursos, gráficos, imágenes, etc.

El servicio de NEWS le permite mantenerse al día en un mundo que cambia a gran velocidad y en el que es necesario estar en contacto con las nuevas técnicas, métodos y productos.

Una contribución o una consulta a alguna de las conferencias alcanza el punto más remoto del globo en menos de 48 horas. Es habitual exponer una pregunta, duda o simple opinión, y disponer en pocas horas de varias respuestas o comentarios.

El volumen de información es elevadísmo. Llegan a recibirse miles de *artículos* (contribuciones) por día, llegándose a 40 Mbytes de información. Como buen sistema de noticias es indigerible en su totalidad, pero proporciona abundante información sobre los temas que nos afectan en nuestro trabajo específico. Una labor necesaria es seleccionar cuidadosamente qué conferencias son de interés para cada usuario.

Un número creciente de conferencias está cambiando su estado, pasando de ser foros abiertos de discusión a estar moderadas por un experto que selecciona las contribuciones y las ordena para optimizar el servicio.

Exiten además conferencias locales, que se limitan a un entorno selecto de trabajo sin tener una difusión mundial. Existen también ciertas conferencias que son de pago, requiriendo una suscripción específica.

Equipamiento:

GOYA proporciona un punto de acceso directo a la red de NEWS. Puede acceder a GOYA de diferentes formas

- sobre la red telefónica, usando un modem
- sobre la red de datos (Iberpac), usando un PAD

En su puesto de trabajo necesita un ordenador que puede ser desde un modesto portátil personal hasta el *mainframe* del centro de cálculo de su empresa. No es habitual que estos equipos incluyan los programas necesarios para leer y elaborar artículos, ni para intercambiarlos via GOYA con al red mundial. Nosotros le proporcionaremos los programas necesarios y le ayudaremos a configurarlos.

Las tarifas incluyen:

- Encaminamiento de las NEWS a través del backbone de *EUnet*.
- Gestión de la alimientación de NEWS en el backbone.

Las tarifas no incluyen:

- El coste de acceder al punto de presencia más próximo.
- El coste de equipos y/o programas en su domicilio.

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E-mail

EUnet
Connecting Europe since 1982

El correo electrónico (E-mail en el argot) permite el intercambio de mensajes directamente desde su puesto de trabajo o desde su propia casa. Los mensajes pueden contener información personal, ficheros, documentos, anuncios, datos, voz, imágenes, etc etc. Un mensaje se entrega típicamente en cuestión de minutos. El receptor no necesita, sin embargo, estar conectado en cada momento, sino que el mensaje se almacenará hasta que esté dispuesto para recogerlo.

EUnet enlaza a unos 4000 centros en Europa y está conectado con todas las redes de correo electrónico tanto europeas como mundiales. El destinatario del mensaje no necesita pertenecer a *EUnet*, basta con estar conectado a cualquier red. Es difícil saber el número de personas accesibles por esta vía, pero se estima en unos 10 millones.

Servicios:

El uso básico de la mensajería electrónica es el intercambio de mensajes entre personas: pero nada impide el envío a grupos. Es típico el uso de direcciones impersonales, asociadas a una posición técnica o administrativa, a una persona única o a un colectivo que se responsabiliza de una tarea compleja. Existen multitud de listas que agrupan a expertos en temas específicos: son listas abiertas donde se debaten temas de actualidad, se resuelven problemas y se potencia la formación de los participantes.

El correo electrónico es un paso más allá que el fax. No requiere una comunicación directa con el destinatario, sólo con el servidor de correo local, que se encargará de enviar los mensajes al destinatario en nombre del remitente. La información enviada puede ser de cualquier tipo: documentos, gráficos, etc. La información puede enviarse tal cual o cifrarla de forma que sólo el destinatario deseado sea capaz de reproducirla. La calidad de la información no se degrada, pudiendo reproducirse en destino con absoluta fidelidad. Es habitual desarrollar documentos de forma cooperativa, al ser posible trabajar directamente sobre el documento recibido.

El sistema de correo electrónico genera automáticamente cierto tipo de mensajes que proporcionan al usuario del servicio informes periódicos del estado de los equipos a su cargo. Los informes pueden archivarse automáticamente, en el momento de enviarlos, y pueden revisarse o recuperarse cuando sea necesario. Ciertas bases de datos emiten periódicamente resumenes de su contenido, últimas modificaciones, etc.

La mensajería electrónica le proporcionará acceso a grandes bancos de datos dispersos por todo el mundo. Basta una solicitud de información encapsulada en un mensaje para recibir el resultado de una búsqueda de información, un índice, o el documento requerido. Hay bases de datos de personas, de documentos públicos, de programas de dominio público, etc.

Equipamiento:

GOYA proporciona un punto de acceso directo a la red *EUnet*, e indirecto a todas las demás redes.
Puede acceder a GOYA de diferentes formas:

- sobre la red telefónica, usando un modem
- sobre la red de datos (Iberpac), usando un PAD
- sobre la red de datos usando protocolos X.400 ('88)

En su puesto de trabajo necesita un ordenador que puede ser desde un modesto portátil personal hasta el *mainframe* del centro de cálculo de su empresa. La mayor parte de estos ordenadores incluyen los programas necesarios para elaborar la información, e incluso es muy probable que incluyan los programas necesarios para conectarse con GOYA.

Las tarifas incluyen:

- Encaminamiento de correo a través de *EUnet*.
- Acceso a todas las redes mundiales .
  (vease el documento EUnet-037: Acceptable Use Policy).

Las tarifas no incluyen:

- El coste de acceder al punto de presencia más próximo.
- El coste de equipos y/o programas en su domicilio.

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EUnetLink -- enlace a Internet, correo y noticias

Servicio orientado a usuarios corporativos, a los que se les proporciona un enlace a los servicios Internet.
Este enlace se basa en los protocolos clásicos UUCP de UNIX.
Cada organización dispone de su propio ordenador que se conecta a Goya para intercambiar información. Típicamente la organización dispone de su propia red de ordenadores, uno de los cuales actua de frontal de comunicaciones para todos los intercambios de información con la red.

Este servicio permite el acceso a los siguientes servicios Internet:
- correo electrónico (E-mail)
- boletines de noticias (News)
- acceso remoto a bases de datos via pasarela (FTPmail)

Los afiliados recibirán un dominio de correo en exclusiva, lo que les permitirá gestionar una organización interna de departamentos, secciones, grupos de trabajo, buzones, etc.

Coste

servicio	alta	cuota
mensajería	10.000 pts	5.500 pts/mes (1)
boletines de noticias	10.000 pts	3.000 pts/mes (2)

(1) fija, mas volumen de uso
(2) facturación mínima mensual

El uso de mensajería electrónica se factura por volumen de tráfico:

nacional	4 pts/Kbyte
europeo	14 pts/Kbyte
intercontinental	25 pts/Kbyte

El servicio de News se factura por tiempo de conexión, a razón de 10 pts/min.

El servicio de acceso a servidores de información (FTPmail) se factura por volumen de uso:

nacional	2 pts/Kbyte
europeo	6 pts/Kbyte
intercontinental	17 pts/Kbyte

Condiciones

El periodo mínimo de suscripción es de 3 meses.
El periodo mínimo de aviso de cancelación es de 2 meses.
Los precios no incluyen IVA (15%)

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EUnetDial -- enlace eventual a Internet

Servicio orientado a usuarios corporativos, a los que se les proporciona un acceso directo a Internet, la red mundial de ordenadores, tambien conocida por los protocolos que utiliza: TCP/IP.
Típicamente la organización dispone de su propia red de ordenadores, más un equipo de comunicaciones (router) que es el que establece el enlace con Goya, bajo demanda.

Este servicio permite el acceso a todos los servicios Internet:
- correo electrónico (E-mail)
- boletines de noticias (News)
- acceso remoto a bases de datos (ftp)
- servidores de información (gopher y WWW)
- acceso remoto a cuentas de usuario (telnet, rlogin)

El usuario recibe un bloque de números IP para que organice internamente su red. La amplitud del bloque dependerá de la dimensión de la red del usuario.
EUnet proporciona el servicio de encaminamiento, así como mantiene el servicio de directorio de nombres (DNS).

Coste

En función del tipo de enlace:

* Sobre red telefónica conmutada (14.400)
  + alta: 30.000 pts
  + cuota fija: 10.000 pts/mes
  + las 10 primeras horas/mes: 50 pts/min
  + entre 10 y 50 horas/mes: 40 pts/min
  + a partir de las 50 horas/mes: 30 pts/min

* Sobre red de datos (Iberpac)
  + alta: 30.000 pts
  + cuota fija: 52.000 pts/mes
  + entre 31 y 50 horas/mes: 20 pts/min
  + a partir de las 50 horas/mes: 15 pts/min

Condiciones

El periodo mínimo de suscripción es de 6 meses.
El periodo mínimo de aviso de cancelación es de 2 meses.
Los precios no incluyen IVA (15%)

Servicios Complementarios

Los siguientes servicios no son necesarios; pero pueden ser cómodos para el usuario.

Si se usara Goya como nodo intermedio para intercambio de mensajería, este uso se facturaría por volumen de tráfico:

nacional	4 pts/Kbyte
europeo	14 pts/Kbyte
intercontinental	25 pts/Kbyte

Si se usara el servicio de acceso a servidores de información (FTPmail) se facturaría por volumen de uso:

nacional	2 pts/Kbyte
europeo	6 pts/Kbyte
intercontinental	17 pts/Kbyte

InterEUnet

EUnet
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Servicio TCP/IP conectado a la Internet en U.S.A.
Suscrito a CIX (Commercial Internet eXchange) a efectos comerciales.

Internet es una red de ordenadores de cobertura mundial. Actualmente conecta a varios millones de ordenadores, la mayor parte en los Estados Unidos, si bien con una amplia y creciente conectividad en Europa. La red se basa en una serie de protocolos que se han convertido en estandares de facto, la familia popularmente denominada TCP/IP.

Internet nació en torno a la I+D americana, conectando centros de investigación y universidades. Su cobertura se ha ido ampliando y actualmente estan conectados gran cantidad de centros públicos y privados: hospitales, fabricantes y proveedores, centros financieros....

Servicios:

- Correo (E-Mail), utilizando el protocolo SMTP
- Noticias (News), utilizando el protocolo NNTP
- Terminal remoto: telnet, rlogin, ...
- Transferencia de ficheros: ftp, fsp, ...

Las tarifas incluyen:

- Encaminamiento de correo a través del backbone de EUnet.
- Enlace al servicio de NEWS a través del backbone de EUnet.
- Acceso a todas las redes conectadas a Internet e InterEUnet, sin más limitaciones que las impuestas por la NSF (vease el documento EUnet-037: Acceptable Use Policy).
- Servicio DNS en nuestras máquinas.

Las tarifas no incluyen:

- El coste de acceder al punto de presencia más próximo.
- El coste de equipos y/o programas en su domicilio.

Los servicios extremo a extremo iniciados por el usuario quedan totalmente cubiertos por las tarifas del capítulo de InterEUnet.

El servicio de E-Mail puede realizarse bien extremo a extremo, bien utilizando a GOYA como nodo intermedio de tránsito. GOYA facturará por aquellos mensajes que procese explícitamente. Si la conexión InterEUnet es permanente (línea dedicada), se puede enviar y recibir mensajes sin pasar por GOYA. Si la conexión es eventual (dial-up) se requerirá que GOYA opere como nodo intermedio en caso de no estar la red accesible.

El servidor de nombres, DNS, se estructurará de forma que primero se intente entregar el mensaje al nodo final, si éste falla que pueda recogerlo GOYA, y si éste fallara, que pueda recogerlo EU.net.

GOYA facturará la cuota correspondiente al servicio de NEWS, si se deseara disponer del mismo.

Las tarifas constan de un alta más un gasto mensual. El alta cubre nuestros gastos de equipo e instalación. La cuota mensual cubre el uso de nuestra infraestructura. La suscripción a este servicio se hará por un período no inferior a un año, requiriéndose un preaviso de seis meses para su cancelación.

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InterEUnet

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Líneas dedicadas

Se puede acceder a InterEUnet disponiendo de una línea punto a punto entre su domicilio y nuestras instalaciones. Todos los gastos de esta línea corren de cuenta del cliente.

Las ventajas principales de una línea dedicada son las siguientes

- no se desperdicia tiempo en establecer el enlace
- los equipos son fiables y prácticamente no requieren atención
- la conexión siempre está disponible
- coste fijo

Una línea dedicada permite que la inmensa mayoría de los mensajes, tanto entrantes como salientes, puedan intercambiarse entre extremos, sin involucrar a GOYA y, por tanto, evitando su facturación. GOYA sólo entrará en juego en caso de fallos en la línea o caidas del equipo del cliente.

La suscripción a este servicio se hará por un período no inferior a un año, requiriéndose un preaviso de seis meses para su cancelación.

Si lo desea, podemos hacerle una oferta integral, haciéndonos cargo de las gestiones con el proveedor del circuito, así como del equipo necesario en su domicilio.

Llamadas (dial-up)

Las ventajas principales de esta opción son:

- pequeños costes fijos
- equipo poco costoso

A cambio de algunas desventajas:

- no se puede garantizar la conexión (el teléfono puede estar ocupado)
- se pierde un tiempo en establecer la llamada (que puede llegar a ser de 1 minuto)
- costes variables
- la conexión es asimétrica

El servicio de mensajería puede utilizarse extremo a extremo cuando el cliente esté conectado. Usualmente, no estará accesible y se utilizará GOYA como nodo intermedio, cobrándose los mensajes según su volumen.

Llamadas a número dedicado (dial-up)

Es una versión algo más cara: pero que permite garantizar un nivel de conectividad al no tener que compartir un número de teléfono con otros clientes.

Números IP

A GOYA se puede conectar bien una máquina, bien una red. Si es una máquina aislada, probablemente le interese que GOYA le proporcione un numero IP de su red.

Si es una red, puede ser que el cliente ya tenga una clase asignada o que aún no. *EUnet* puede suministrarle una o más clases C, asignadas a *EUnet*/España dentro del marco de encaminamiento por bloques (vease el documento rfc1138). Si el cliente ya dispone de su propia clase, bastará adscribirla al sistema autónomo de *EUnet*/España, si bien se perderán algunos de los beneficios derivados del encaminamiento por bloques.

Puede que la clase IP disfrute del status de *conectada*, status fácil de conseguir para centros sin ánimo de lucro: pero que puede ser más laborioso para entes comerciales. EUnet puede hacerse cargo de la gestión de estas autorizaciones. Si se atiene a todos los requisitos de conectividad, GOYA la dará acceso a los servicios Internet mundiales.Si hubiera problemas que impidieran la plena integración en Internet, GOYA se limitará a proporcional acceso a servicios de Internet locales.

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InterEUnet -- enlace permanente a Internet

Servicio orientado a usuarios corporativos, a los que se les proporciona un acceso permanente a Internet, la red mundial de ordenadores, tambien conocida por los protocolos que utiliza: TCP/IP.
Típicamente la organización dispone de su propia red de ordenadores, más un equipo de comunicaciones (router) que es el que establece el enlace con la red propia de EUnet y, a través de ella con Internet.

Este servicio permite el acceso a todos los servicios Internet:
- correo electrónico (E-mail / SMTP)
- boletines de noticias (News / NNTP)
- acceso remoto a bases de datos (ftp)
- servidores de información (gopher y WWW)
- acceso remoto a cuentas de usuario (telnet, rlogin)

El usuario recibe un bloque de números IP para que organice internamente su red. La amplitud del bloque dependerá de la dimensión de la red del usuario.
EUnet proporciona el servicio de encaminamiento, así como mantiene el servicio de directorio de nombres (DNS).
Si el usuario deseara mantener el servicio DNS en un ordenador propio, EUnet se limitaría a ser un servidor secundario.

Coste

En función del tipo de enlace:

enlace	alta	cuota
64K (1)	400.000	300.000
19.200 (1)	300.000	180.000
9600 (1)	200.000	130.000
14.400 (2)	150.000	100.000

(1) línea punto a punto, alquilada por el cliente
(2) red telefónica conmutada, conexión permanente

Condiciones

El periodo mínimo de suscripción es de 1 año.
El periodo mínimo de aviso de cancelación es de 6 meses.
Los precios no incluyen IVA (15%)

Servicios Complementarios

Los siguientes servicios no son necesarios; pero pueden ser cómodos para el usuario.

Si se usara Goya como nodo intermedio para intercambio de mensajería, este uso se facturaría por volumen de tráfico:

nacional	4 pts/Kbyte
europeo	14 pts/Kbyte
intercontinental	25 pts/Kbyte

Si se usara el servicio de acceso a servidores de información (FTPmail) se facturaría por volumen de uso:

nacional	2 pts/Kbyte
europeo	6 pts/Kbyte
intercontinental	17 pts/Kbyte

Contrato de Servicios

EUnet
Connecting Europe since 1982

DATOS DE LA EMPRESA

NOMBRE

CIF

DOMICILIO (calle, plaza, avda y número)

LOCALIDAD

C.P.

PROVINCIA

RESPONSABLE ADMINISTRATIVO

NOMBRE Y APELLIDOS

CARGO QUE OCUPA

TELEFONO(S) DE CONTACTO

FAX

CORREO ELECTRONICO
eunet-adm@*suDominio*.es

RESPONSABLE TÉCNICO

NOMBRE Y APELLIDOS

CARGO QUE OCUPA

TELEFONO(S) DE CONTACTO

FAX

CORREO ELECTRONICO
postmaster@*suDominio*.es

SERVICIOS BAJO CONTRATO (marque con una cruz los servicios deseados)

- ☐ EUnetLink
  - ☐ NEWS (opcional)
- ☐ EUnetDial
  - ☐ vía RTC
  - ☐ vía x25
- ☐ InterEUnet
  - ☐ 64 Kbps
  - ☐ 19.2 Kbps
  - ☐ 9.6 Kbps
  - ☐ RTC-24h

SU DOMINIO
_____.ES

☐ Deseo recibir un resumen mensual detallado de utilización

Los abajo firmantes entienden y aceptan las condiciones generales de la red EUnet.
Firmado en Madrid, a ____ de _____ de 199__

FIRMA DE LOS REPRESENTANTES LEGALES DEL ABONADO

Goya Servicios Telemáticos, p.p.

DOMICILIACIÓN BANCARIA

Sr. Director, le ruego que acepte los cargos mensuales girados a favor de Goya Servicios Telemáticos SA contra la cuenta indicada, hasta nueva orden

TITULAR DE LA CUENTA

Nº DE C. CORRIENTE/AHORRO

ENTIDAD BANCARIA

CLAVE SUCURSAL

DOMICILIO (calle, plaza, avda)

FIRMA DEL TITULAR

LOCALIDAD

C.P.

PROVINCIA

Goya Servicios Telemáticos, S.A. CIF A80 485659. Registro Mercantil Provincia de Madrid. Hoja M-82467, Folio 17, Tomo 5024 del libro de Sociedades.

CONDICIONES GENERALES DEL CONTRATO

I.- CUESTIONES PREVIAS:

1. Las presentes condiciones regularán expresamente las relaciones surgidas entre Goya Servicios Telemáticos,S.A., en adelante "GOYA", y los usuarios de los servicios de la red EUNET, en adelante "Abonados", anulando cualquier acuerdo previo que pudiera existir entre las partes.

2. El acceso a los servicios de la red por primera vez supone la aceptación expresa de todas estas condiciones.

3. GOYA podrá modificar cualquiera de las presentes condiciones comunicándolo con un mes de antelación al abonado, y si éste no denuncia las condiciones cambiadas, mediante el envío de carta a sus oficinas, en un plazo de dos semanas a contar desde la recepción del aviso y continúa haciendo uso de la red a partir de su entrada en vigor, se entiende que acepta las modificaciones. En caso de que denuncie el abonado, GOYA anulará el presente contrato desde la fecha de entrada en vigor de las modificaciones.

II.-ABONADO

1. A los efectos del presente contrato, ABONADO es aquella persona física, jurídica o institución que, contando con una estructura informática adecuada, contrata con GOYA la utilización de los servicios de la red EUNET.

2. La condición de abonado es personal e intransferible, no pudiendo cederse a terceras personas sin el consentimiento expreso de GOYA.

3. En caso de utilización del servicio por terceras personas autorizadas expresamente por GOYA, el abonado deberá formarlas adecuadamente y hacerse cargo de los gastos de utilización, y responder frente a GOYA del mal uso del sistema.

III.- DERECHOS Y OBLIGACIONES DEL ABONADO

1. El abonado tendrá derecho a la utilización de los servicios que expresamente contrate de la red EUNET a través de GOYA.

2. El abonado podrá autolimitar el gasto, para los servicios de precio según utilización, a una cantidad máxima voluntaria, comunicándosela por escrito a GOYA, quien avisará cuando se produzca la extralimitación para que el abonado autorice puntualmente por escrito la elevación del límite, caso contrario GOYA interrumpirá el servicio hasta el mes siguiente.

3. El abonado está obligado a efectuar los pagos acordados según las tarifas vigentes con el correspondiente IVA y en los plazos convenidos.

4. El abonado se obliga al mantenimiento de su soporte informático imprescindible para el acceso a la red.

5. El abonado responde del buen uso de la conexión, comprometiéndose expresamente a evitar cualquier tipo de acción que pueda dañar a sistemas, equipos o servicios accesibles directa o indirectamente a través de GOYA, incluyendo la congestión intencionada de enlaces o sistemas., y de acuerdo con las normas contenidas en el presente documento.

IV.-DURACIÓN DEL CONTRATO

1. El presente contrato tiene un plazo de duración mínima de un año natural en el caso de InterEUnet, seis meses en el caso de EUnetDial y tres meses en el caso de EUnetLink. En todos los casos, este contrato se renueva automáticamente por períodos de igual tiempo, de no mediar denuncia por escrito con la antelación de seis meses en el servicio InterEUnet y dos meses en los demás servicios, proviniente de cualquiera de las partes.

2. No obstante, GOYA se reserva la facultad de rescindir el presente contrato antes de su vencimiento por causa justificada, comunicándolo al abonado con una antelación de DOS MESES.

V.-PRECIO Y CONDICIONES DE PAGO

1. El abonado se obliga al pago del abono y la utilización de los servicios de la red tanto si son realizados por él mismo, como por persona autorizada o no por él, según las tarifas vigentes, que declara conocer y aceptar. Dichas tarifas se incrementarán en el tanto por ciento correspondiente al I.V.A.

2. Las tarifas podrán ser modificadas por GOYA, comunicándolo al abonado con al menos dos meses de antelación a su entrada en vigor.

3. Los pagos fijos mensuales han de realizarse por meses adelantados y dentro de los cinco primeros días de cada mes, a cuyo efecto se emitirá la correspondiente factura.

4. Los gastos por volumen de uso se facturarán dentro de los cinco primeros días del mes siguiente al de su utilización.

5. El retraso en el pago superior a quince días desde la fecha de emisión de la factura, generará unos intereses de demora que ascenderán al 18% anual sobre la cantidad impagada. Sin perjuicio de la repercusión de los gastos de devolución en su caso.

6. El impago de facturas podrá producir interrupciones en el servicio, mientras el abonado no regularice dicha situación.

7. GOYA se reserva el derecho a cortar el servicio si los pagos se retrasan más allá de 60 días naturales desde la fecha de emisión de la factura. Si el pago no se regulariza, GOYA podrá rescindir el presente contrato sin necesidad de comunicación previa, con obligación para el abonado del pago de un año completo de abono en concepto de indemnización para el resarcimiento de los daños y perjuicios ocasionados, corriendo el que impagó con todos los gastos, incluso de abogado, y costas judiciales, en su caso.

nado a indemnización por daños y perjuicios.

VI.-CONDICIONES DE USO

1. El abonado tendrá derecho a la utilización de los servicios estrictamente contratados de la red, responsabilizándose del contenido de la información que se transfiera a través de la misma.

2. Queda expresamente prohibida la transmisión de información que atente contra los derechos de terceros, la moral o la legislación vigente de todos y cada uno de los países que atraviese.

3. El abonado deberá atender a las indicaciones de los administradores de la red y comunicarlas a los usuarios de su sistema. A dicho efecto deberá leer regularmente los boletines de información que les serán remitidos en su momento por GOYA.

4. El abonado deberá seguir las normas y términos de utilización de acceso a cualquier otra red de servicios a través de GOYA.

5. El abonado deberá mantener en secreto los códigos de acceso, y solicitar de GOYA su cambio si existe la suposición de que terceras personas han conocido o conocen indebidamente los mismos.

6. Dado que los servicios de valor añadido InterEUnet se prestan a través de medios de comunicación compartidos, el abonado está obligado a restringir el tráfico medio mensual al 10% de la capacidad nominal de conexión contratada por el abonado. La superación de este límite será considerada como utilización abusiva del servicio.

7. Si el abonado incumpliera alguna de las condiciones de uso o sus obligaciones, GOYA se reserva el derecho de interrumpir el servicio con carácter de urgencia, comunicándoselo inmediatamente al usuario que deberá corregir la causa del defecto para que el servicio pueda ser restablecido. Si el abonado no corrigiera el defecto en un plazo de 15 días, GOYA puede considerarlo causa de resolución de contrato, con obligación para el usuario de indemnizar a GOYA con el pago de un año de abono, en concepto de daños y perjuicios.

VII.-SERVICIOS PRESTADOS POR GOYA

1. Cuidará del mantenimiento de las instalaciones necesarias para el funcionamiento de la red, con un equipo técnico e informático adecuado.

2. Directamente o subcontratando el servicio, prestará apoyo e información acerca de los requisitos de funcionamiento o problemas genéricos a los abonados que lo soliciten.

3. No ejercerá ningún control sobre el contenido de la información que circule por sus redes.

4. GOYA se reserva el derecho de ampliar o mejorar los servicios prestados, sin necesidad de comunicación previa. En las mismas condiciones, GOYA se reserva el derecho de alterar los medios utilizados para la prestación del servicio.

VIII.-MANTENIMIENTO DE SECRETO Y PROTECCIÓN DE DATOS

1. De no mediar acuerdo expreso por escrito, las informaciones de GOYA son confidenciales.

2. El abonado conoce que GOYA utiliza la dirección o los datos del cliente mecánicamente y para funciones que resulten del contrato y de acuerdo con la Ley de protección de datos y cualquier otra que le fuera aplicable.

3. GOYA podrá, con autorización del abonado y de acuerdo con las normas internacionalmente reconocidas, comunicar datos del mismo a terceras personas que se lo soliciten.

IX.-LIMITACIONES DE RESPONSABILIDAD

1. GOYA no será responsable ni expresa ni implícitamente, de la adecuación de los servicios que proporciona a las necesidades reales del abonado. Su inadecuación no podrá ser causa de resolución, ni de devoluciones de pago.

2. La responsabilidad de GOYA en cualquiera de los casos de incumplimiento imputables a ella estará limitada al importe mensual de abono a los servicios de GOYA.

3. Dado que GOYA depende de los servicios de terceras partes para la adecuada prestación de los que le son propios, GOYA declina toda responsabilidad por los daños o perjuicios causados por culpa de aquellas, aceptando exclusivamente los debidos a una inadecuación de los medios telemáticos de soporte o a la negligente actuación de sus propios empleados.

4. Dado que la mayor parte de las instalaciones necesarias para el buen funcionamiento de la red dependen de terceras compañías, GOYA no será responsable del resultado del servicio. Esto incluye errores de encaminamiento, pérdidas de información o datos, retrasos en la entrega o interrupciones del servicio no planificadas.

5. GOYA declina toda responsabilidad relacionada con la calidad, exactitud, fiabilidad y corrección de los datos, programas e información de cualquier tipo que circulen por sus redes. El contenido de dicha información es de la exclusiva responsabilidad de los sujetos que la intercambien (remitente y destinatarios).

6. GOYA no responderá en caso de utilización no autorizada por terceros del ser-vicio.

X.-CONDICIONES FINALES

1. Cada cláusula de este contrato es válida en sí misma y no invalidará al resto. La cláusula inválida o incompleta podrá ser sustituida por otra equivalente y válida por acuerdo de las partes.

2. En las reclamaciones que pudieran derivarse del uso del abono, todos los interesados se someten a los jueces y Tribunales de Madrid, renunciando a cualquier fuero que pudiera corresponderles.

Below you can find the following information about EUnet Traveller service:

* Introduction to the EUnet Traveller

* Frequently Asked Questions about the EUnet Traveller

* EUnet Traveller Access and Support contact information

* How to retrieve information about EUnet Traveller

* EUnet Traveller Press Release

* Terms and Conditions

For further information, please send E-mail to <traveller@EU.net>

EUnet Traveller
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When you need to be in two places at once..

Many business travellers take their important documents with them on a portable computer - it's a great way to take your office with you. But what if you forget something important ? Or if you need to watch out for that important piece of electronic mail that's due to arrive while you're gone ?

A simple phone call before you go will solve those problems by giving you access to EUnet Traveller. Using your portable computer and a modem, access to your computer back home is available in many major European cities at the cost of a local telephone call. You don't need any specialised computer software - and you can subscribe using your credit card. We even give you information about the different power and phone connectors you're likely to encouter on your travels. It couldn't be simpler. So there's no excuse for being cut off when you can be connected... to EUnet.

Technical Information

To use EUnet Traveller your portable computer needs standard terminal emulation software - such as that supplied with Microsoft Windows 3.1 - and a common modem (V.22bis, V.32 or V.32bis). Your home computer must already be connected to EUnet (or another Internet-connected network with access to EUnet) and support login from another computer using the telnet protocol. Ask your network manager if you need more information.

Billing Information

EUnet Traveller subscriptions are normally arranged by credit card. A start-up charge and usage charges apply. If required, each EUnet Traveller account can be individually restricted to access only specified host computer systems. For current prices, contact the EUnet Amsterdam Office.

EUnet
Kruislaan 409
1098 SJ Amsterdam
The Netherlands
Tel: +31 20 592 5109
Fax: +31 20 592 5163
E-mail: info@EU.net

EUnet is a registered trademark of EUnet Deutschland GmbH and of EurOpen Limited.

EUnet Traveller Frequently Asked Questions
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If you need more information about the EUnet Traveller service, please contact our EUnet Traveller support at <traveller@EU.net>.

Where is EUnet Traveller available ?

On December 1st 1993, EUnet Traveller will be available in the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, The Netherlands, Norway, Spain, Switzerland and United Kingdom.

Other EUnet countries will follow in the near future. If you need E.T. access in a country where it's not yet available, please let us know.

What kind of access does E.T. actually provide ?

E.T. is a global Internet access service. It provides access to your Internet-connected home environment via dozens of EUnet Points-of-Presence across Europe. E.T. provides you the same functionality as 'telnet yourhost' from any other host in the Internet.

EUnet has a policy of continuous product development. We are working on more sophisticated options for the E.T. service and we are open for any ideas and suggestions to satisfy your requirements.

Can I use our proprietary XYZ E-mail system over E.T. ?

E.T. provides an 8-bit transparent telnet connection to any Internet-connected host. If your application works over such a connection there should be no problems.

E.T. does not provide TCP/IP level access to your portable

computer and therefore common dial-up IP applications will not work - yet.

We have a PC E-mail Environment and SMTP support at the Gateway. Could we take advantage of E.T. ?

E.T. is designed to give travelling people access to their home machines via Internet. It is not, in the current scope of the product, possible to support mail forwarding to mobile hosts, unless this can take place over a telnet session. It is unlikely that we will support proprietary E-mail protocols in the future.

Can I access general Internet services using E.T. ?

Yes, provided you can from your home host. E.T. provides access to your home environment -- is a terminal session to your home machine. You can run any terminal application over the connection, such as ftp, telnet to other hosts, gopher, news, and so on. You just need to have your favourite terminal version of the application installed.

I'm located in the US but I travel occasionally to Europe. Can I subscribe to the E.T. service ?

E.T. is available for everyone, and the major users will be businessmen, executives and other people travelling occasionally to Europe from other parts of the world, eg. US, Japan, Australia.

E.T. is charged for by credit card (VISA, MasterCard/EuroCard) and therefore easily available for travellers from the US.

With E.T. you can access your Internet-connected home environment from any European country where the E.T. service is available. Even from countries where E.T. is not yet available you can always call the nearest E.T. country - cheaper than calling all the way home!

Can we get one corporate account and receive monthly per user usage information ?

Currently E.T. is charged on per-account basis. We are working on providing support for corporate accounts with per-user accounting.

An option to limit the destination hosts will also be available.

I'm a professor at a US University and I give occasional lectures in Europe. I need the service only a few times a year. What should I do ?

E.T.'s major targets are frequent travellers, such as businessmen, executives and other professional people such as yourself. The basic fees are designed to meet the needs of average travelling people. However, it's still a very economical way to stay in touch while you're away.

What kind of software do I need on my PC or Mac Powerbook ?

E.T. works with any terminal emulator and communications package. On a PC you can use eg Kermit, Procomm Plus, Telix, SmartTerm, Trans Send, CrossTalk, etc. On a Macintosh you can

use Kermit or VersaTerm.

If you buy a modem it will usually come bundled with a terminal emulator package for a PC or Macintosh.

EUnet Traveller
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11 February 1994

Point-of-Presence List
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Country	Location	Intl. access number	Nat. access number	Speed
AT	Vienna	+43 1 3171992	(0222) 3171992	14400
AT	Salzburg	+43 662 459041	(0662) 459041	14400
AT	Linz	+43 732 348761	(0732) 348761	14400
AT	Graz	+43 316 263131	(0316) 263131	14400
BE	Leuven	+32 16 238571	(016) 238571	14400
CH	Lugano	+41 91 22 71 82	091 22 71 82	14400
CH	Geneva	+41 22 329 37 51	022 329 37 51	14400
CH	Zuerich	+41 1 291 46 87	01 291 46 87	14400
CH	Basel	+41 61 697 36 42	061 697 36 42	14400
DE	Dortmund	+49 231 972 1504	(0231)/972 1504	14400
DK	Copenhagen	+45 31 20 38 22	31 20 38 22	2400
DK	Copenhagen	+45 39 27 17 61	39 27 17 61	14400
ES	Madrid	+34 1 519 14 95	(91) 519 14 95	14400
FI	Helsinki	+358 0 455 1100	(90) 455 1100	14400
FR	Paris area	+33 1 39 63 52 54	(16 1) 39 63 52 54	14400
GB	Canterbury	+44 227 780711	0227 780711	14400
GB	London	+44 71 328 6714	071 328 6714	14400
GB	London	+44 71 624 6361	071 624 6361	14400
GB	Cambridge	+44 223 236330	0223 236330	14400
GB	Bracknell	+44 344 305710	0344 305710	14400
GB	Birmingham	+44 21 753 1360	021 753 1360	14400
HU	Budapest	+36 1 2698383	(06 1) 2698383	14400
IE	Dublin	+353 1 679 0830	(01) 679 0830	14400
IT	Genova	+39 10 363956	(010) 363956	14400
IT	Torino	+39 11 2422077	(011) 2422077	14400
IT	Torino	+39 11 2422104	(011) 2422104	14400
IT	Milano	+39 2 70109289	(02) 70109289	14400
IT	Milano	+39 2 70109404	(02) 70109404	14400
IT	Milano	+39 2 70109407	(02) 70109407	14400
IT	Milano	+39 2 70109412	(02) 70109412	14400
IT	Roma	+39 6 41733025	(06) 41733025	14400
IT	Roma	+39 6 41733026	(06) 41733026	14400
IT	Roma	+39 6 41732957	(06) 41732957	14400
IT	Roma	+39 6 41732967	(06) 41732967	14400
NL	Amsterdam	+31 20 6658599	(020) 6658599	14400
NO	Oslo	+47 22 46 27 60	22 46 27 60	9600
NO	Oslo	+47 22 56 88 62	22 56 88 62	14400

EUnet Traveller National Support Contacts
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Country	Location	Support number	Support fax

AT	Vienna	+43 1 3174969	+43 1 3104462
AT	Salzburg	+43 1 3174969	+43 1 3104462
AT	Linz	+43 1 3174969	+43 1 3104462
AT	Graz	+43 1 3174969	+43 1 3104462
BE	Leuven	+32 16 201015 x 3536	+31 16 205308
CH	Lugano	+41 1 291 45 80	+41 1 291 46 42
CH	Geneva	+41 1 291 45 80	+41 1 291 46 42
CH	Zuerich	+41 1 291 45 80	+41 1 291 46 42
CH	Basel	+41 1 291 45 80	+41 1 291 46 42
DE	Dortmund	+49 231 972 2222	+49 231 972 1111
DK	Copenhagen	+45 39 17 99 00	+45 39 17 98 97
ES	Madrid	+34 1 413 48 56	+34 1 413 49 01
FI	Helsinki	+358 0 400 2060	+358 0 622 2626
FR	Paris area	+33 1 39 63 56 23	+33 1 39 63 53 30
GB	Canterbury	+44 227 475497	+44 227 475478
GB	London	+44 227 475497	+44 227 475478
GB	Cambridge	+44 227 475497	+44 227 475478
GB	Bracknell	+44 227 475497	+44 227 475478
GB	Birmingham	+44 227 475497	+44 227 475478
HU	Budapest	+36 1 1497986	+36 1 1297866
IE	Dublin	+353 1 679 0832	+353 1 679 8039
IT	Genova	+39 10 3532747	+39 10 3532948
IT	Torino	+39 10 3532747	+39 10 3532948
IT	Milano	+39 10 3532747	+39 10 3532948
IT	Roma	+39 10 3532747	+39 10 3532948
NL	Amsterdam	+31 20 592 4245	+31 20 592 4199
NO	Oslo	+47 22 95 83 27	+47 22 60 44 27

Telephone and Power connector information

Country	Power Volt	Hz	Plug type	Telephone Plug type	RJ11	Shops
AT	220	50	-	-	N	
BE	220	50	-	-	N	Belgacom Telecom
CH	230	50	-	-	N	Eletronic Shops
DE	220	50	-	-	N	Electronic Shops
DK	230	50	-	-	N	Electronic Shops
ES	220	50	-	-	Y	
FI	230	50	-	-	N	Electronics/PTT shops
FR	220	50	-	-	N	Electronic Shops
GB	240	50	-	-	N	Difficult
HU	220	50	-	-	N	* Electronic Shops
IE	220	50	-	-	Y	
NL	220	50	-	-	N	Primafone

Modems: In many European countries the modems should be approved by the national telecommunication authorities. Many European countries are moving to common EC approval in modems.

Power adapters: Powerplug adapters for various plug types are commonly available at airports and large department stores.

Telephone adapters: Adapters to convert the national telephone plug to RJ11 are commonly available at airports and PTT shops. In the table above we have indicated some potential sources for adaptors.

Hotels: Some European hotels do not provide access to the telephone in

the hotel rooms. Please check the situation with your hotel.

EUnet Traveller
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You can find further information about EUnet Traveller using one of the following Internet tools:

via Anonymous FTP
   FTP to ftp.EU.net and retrieve files from directory /EUnet/Traveller/

via Gopher
   Gopher to gopher.EU.netand select Traveller from the services list.

via World Wide Web
   Use your favourite web-client, such as Mosaic, to access
   http://www.EU.net/Traveller/

via Telnet
   Take telnet session to Traveller.EU.net and login as new for further information. EUnet Traveller information will be sent you via E-mail.

For further information, please contact EUnet central office in Amsterdam:

   EUnet Limited
   Kruislaan 409
   1098 SJ Amsterdam

   Tel. +31 20 592 5109
   Fax. +31 20 592 5163
   E-mail traveller@EU.net

EUnet Traveller
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22 October 1993

PRESS RELEASE
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EUnet BRINGS THE INTERNET TO THE
==========
TRAVELLING EXECUTIVE
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PARIS, 27th October 1993: A new service from EUnet, the Europe-wide supplier of electronic network services, enables executives on the move to take full advantage of the global Internet, from wherever they are.

The service, called EUnet Traveller, will be available in twelve European countries from 1st December. EUnet Traveller provides customers with direct links to their Internet-linked host computer

via dial-up access points in major European countries.

The Internet operates like the international telephone network, providing direct access to over 15 million of subscribers around the world. At present rates of growth, Internet connections are forecast to be almost as numerous as telephones by the end of the decade.

EUnet Traveller may be used from any computer, portable or desktop, fitted with a modem and appropriate software such as Procomm or the Terminal Emulator available in Microsoft Windows 3.1. Local dial-up access points ensure that EUnet Traveller customers will only incur domestic rather than international telephone connection charges or hotel surcharges.

Using EUnet Traveller, travelling executives from an organisation with an EUnet-connected Local Area Network are able to connect directly with their office system from their hotel room or anywhere else. This enables them to keep in close touch by sending and receiving electronic mail and exchanging files.

"This service will liberate anyone who currently uses the Internet", commented EUnet Chief Executive Glenn Kowack, "Now they won't have to use a particular computer in a particular place, they can do it from wherever they are".

Organisations wishing to use EUnet Traveller which are not currently linked to the Internet may arrange for connection via EUnet's existing services.

EUnet Traveller security standards involve individual customer identification and passwords. An authentication procedure at the destination host system ensures user privacy.

Initially, EUnet Traveller is available in twelve European countries (Austria, Belgium, Finland, France, Germany, Hungary, Ireland, Italy, The Netherlands, Norway, Switzerland and the United Kingdom) with coverage expected to grow throughout the EUnet network during 1994.

Customers will pay a once-only sign-up fee of ECU 30, a monthly service charge of ECU 30 which includes three hours connection time, and ECU 10 per extra hour connected. Local VAT (17.5%) will be added. Charges will be made against customers' charge or credit cards.

The EUnet Traveller Starter Pack includes where-to-dial information for each participating country; details of telephone help services; a personal password and a guidebook covering telephone and power plug compatibility issues.

EUnet Limited is jointly owned by the EUnet national service providers and EurOpen, the European Forum for Open Systems.

EUnet services include electronic mail (Internet-style RFC 822 as well as X.400), InterEUnet (Internet Protocol) connectivity and services such as remote log-in and file transfer over leased and dial-up lines, X.25 and ISDN. EUnet is the primary European region provider of Network News, the world's largest electronic conferencing system, and the top-level European distributor of Internet Talk Radio.

EUnet operates its own infrastructure across Europe, and is the largest European component of the Internet (the world's network of computer systems). EUnet is a member of CIX, the Commercial Internet Exchange, and Ebone93, a research network consortium.

For Further Information:
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EUnet is a registered trademark of EUnet Deutschland GmbH and of EurOpen Limited. All other trademarks acknowledged.

Subscription Agreement
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By completing the on-line EUnet Traveller subscription form, the subscriber indicates his acceptance and compliance with the terms and conditions of the "EUnet traveller", a service provided by EUnet B.V. i.o., as specified in this agreement and the general conditions of EUnet B.V. i.o.

The subscriber accepts the following obligations:

1. payment of a set up fee of XEU 30 + local VAT (17.5%);
2. payment of credit card invoices to be calcOLated on the basis of use at a rate of XEU 10 per hour at a minimum of XEU 30 per month + local VAT (17.5%);
3. to conform to the General Conditions as set forth hereafter;
4. the subscriber authorises EUnet to charge the subscriber-indicated credit card for any and all amounts that may become due under this agreement. This authorisation shall remain in effect until the subscriber has issued instructions by e-mail or fax message, to the contrary. The credit card number, name and expiry date are required for identification. It is understood that any billing errors will be credited to the credit card's account;
5. the service provided is an interactive service and is not to be used for bulk data transfer. If the traffic significantly exceeds a level consistent with interactive use, an additional fee may be charged.

Credit cards accepted by EUnet BVio:

1. American Express
2. Visa
3. Eurocard/Mastercard

General Conditions
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1. The services provided under this agreement may only be used

for lawfOL purposes. The subscriber shall indemnify and hold harmless EUnet from any claims resOLting from the subscriber's use. The agreement may be terminated if the subscriber becomes insolvent or subject to bankruptcy or if found to be in conflict with any applicable state or local law or regOLation.

2. EUnet shall not be liable for and the subscriber shall hold it harmless from any damages whatsoever including but not limited to any direct or consequential damages claimed for loss of data, delays, income, personal or property loss, revenue, or profits or for loss of goodwill arising from or related to failures, interruptions or deficiencies in the services provided pursuant to this agreement. EUnet makes no warranties of any kind including but not limited to fitness of purpose guarantees.

   Even if EUnet under applicable laws can be held liable for such damages, notwithstanding the above, such liability will in any event be limited to the extend covered by insurance or, if no insurance covers the liability, to the aggregate amount involved in this agreement to date.
3. All payments for services that are billed directly to the subscriber, become due and payable after 10 days upon receipt of the invoice. Credit card based services will be invoiced through the credit card organization, but in case of failure of this procedure, subscribers can be billed directly. EUnet reserves the right to impose a late charge of 1.5% per month in the event of late payment, notwithstanding EUnet's right to claim damages such as collection costs and to terminate the agreement forthwith. Such termination shall not affect the subscriber's obligations under this agreement.
4. The service provides access by the subscriber only; this agreement may not be assigned or transferred to another party without the prior written consent of EUnet. It may be terminated by either party without cause on thirty (30) days written notice. This agreement and the services provided hereunder may be suspended and/or terminated if EUnet's contracts with its service providers are suspended and/or terminated.
5. The subscriber agrees not to disclose the contents of this agreement to any outside party without the prior written consent of EUnet.
6. If the performance of the respective obligations of EUnet or the subscriber shall be prevented or interfered with by an event of force majeure, the non-performing party shall not be liable to the other party for its failure to perform such obligations and such failure shall not constitute a breach of this agreement.
7. Except for services subscribed to and terminated by electronic mail, any notice required to be given shall be in writing and shall be delivered by hand, by fax or by certified or registered mail to the address set forth below (or such other address as may from time to time be designated in writing).
8. This agreement constitutes the entire understanding of the parties and its terms and conditions may not be amended or modified except in writing signed by both parties. No oral statement of any local representatives or person whomsoever shall in any manner or degree modify or otherwise affect the terms and conditions of this agreement.
9. If any legal action is necessary in order to enforce the terms

of this agreement, the prevailing party shall be entitled to recover its attorney's fees and costs from the non-prevailing party in addition to any other relief to which it may be entitled. This agreement and performance hereunder shall in all respects be governed by the laws of the Netherlands and the applicable jurisdiction shall be a competent court in the Netherlands.

10. Any taxes and other levies which may be imposed on the subscriber related to the services provided shall be the responsibility of the subscriber.
11. This agreement is executed in English and may also be signed or presented in another language. In the event of a conflict in interpretation, the English version shall prevail.

EUnet BVio
Kruislaan 409
1098 SJ Amsterdam
The Netherlands

tel: +31 20 592 51 09
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EUnet is a registered trademark of EUnet Deutschland GmbH and of EurOpen Limited.

INTERNET PROVIDER: HONG KONG SUPERNET

Company & Service Overview

- HK SUPERNET is commercial dial-up service which provides access to Internet.
  - SUPERNET operates a dedicated 64Kpbs private lease circuit connecting its Hong Kong facilities to Performance Systems International - Santa Clara, California - which provides connectivity to all major Internet interexchanges.
  - SUPERNET file server provides the local environment from which users access the Internet.

- HK SUPERNET dial-up service is designed to meet the needs of individuals and small businesses desiring a low cost access to Internet.
  - Requires that customer has a PC equipped with standard serial communications software and a modem.
  - Customer gains access to Internet by dialing a Hong Kong number into the SUPERNET dial-up modem pool.
  - Applications are general purpose communications i.e. file transfer and information sharing, etc.

Summary of HK SUPERNET Service Offering

- SUPERNET provides the full complement to the global Internet and Internet service capabilities:

  - File Transfer (FTP)
  - Interactive terminal session (telnet)
  - E-mail
  - IRC Chat
  - Access to USENET News
  - Clarinet Commercial News feed
  - Connectivity Protocols
    - UUCP
    - SLIP
    - PPP

- SUPERNET Dedicated Internet Access Service

  - For Customers requiring large amounts of resources. It may be implemented using dial-up or private leased circuits. Provides for:

    - 24 hr/day, 7 day/week single line connection
    - 100 login ids
    - 100 MB of disk space
    - 1GB (file) transfer volume

  - Same service capabilities as with the dial-up service.

  - Fee: HK$ 3500/month.

- HK SUPERNET offers classes at no additional charge to its customer. It also provides telephone assistance, help documents, and books.

SUPERNET Usage Fees

One Time Sign-up	HK$ 175	
Monthly Usage	HK$ 175	• For up to 17.5 hrs/mo. • Includes 2.5 Mbytes of on-line storage
Additional Charges: • Usage (above HK$175 of connect time) • Storage above 2.5 MB	HK$ 25/hr during Peak Hrs. HK$ 10/hr. during off-Peak HK$ 20/MB/month	• Peak Hours: 0900 - 2100 • Off Peak: 2100 - 0900

DIAL-UP INTERNET ACCESS — HONG KONG SUPERNET

Sign-up Fee and Minimum Monthly Fee: HK$ 175
Peak Time Connect Charge: HK$ 25 per hour
Off-Peak Time Connect Charge: HK$ 10 per hour

DESCRIPTION

Supernet Dial-up service is designed to meet the needs of individuals and small businesses desiring a low cost means of accessing the Internet. Supernet Dial-up service minimally requires you to have a personal computer equipped with standard serial communications software and a modem attached to a telephone line. Subscribers gain access by dialing a Hong Kong telephone number and connecting to the Supernet dial-up modem pool. The one time sign-up fee for Supernet Dial-up service is HK$ 175. The monthly minimum fee is HK$ 175 per month. This monthly fee includes:

[*] LOGIN IDs ON THE SUPERNET UNIX SERVER

Each Supernet subscriber receives a login ID on the Supernet UNIX Server with full access to the Internet. Included are personal electronic mail (email) boxes and individual Internet email addresses. The Supernet UNIX Server provides numerous software utilities including the ability to send and receive files from anywhere on the Internet utilizing File Transfer Protocol (FTP), and interactive terminal sessions utilizing Telnet. Subscribers will have access to nearly 2000 special interest discussion groups on USENET News including ClariNet commercial news feed with full United Press International newswire and many special-interest features. There are many utilities available on the Supernet Server to assist you in navigating the Internet including: Archie, and Gopher, and WAIS. For even more functionality and ease of use, login IDs for machines and remote networks may be created for use with the UUCP, SLIP or PPP protocols.

[*] INITIAL CONNECTION TIME INCLUDED: up to 17.5 Hours per Month

Connection time is charged at two rates depending on time of day. Peak time is between 0900 and 2100, and Off-peak time is from 2100 to 0900 the next day. During peak time, connection charge is HK$25 per hour. During Off-peak the connection charge is HK$10 per hour. Our monthly minimum billing is HK$175 which corresponds to a 7 hour peak, or 17.5 hour off peak credit per month. If your connect time doesn't exceed these amounts, you pay just HK$175

per month.

[*] ON-LINE STORAGE INCLUDED - No Charge for Temporay Storage

Included in the HK$175 per month minimum billing is 2.5 Megabytes of on-line storage. If subscribers exceed this amount, they will be charged at the rate of HK$ 20 per month per Megabyte. A single measurement is taken daily and then averaged over the 30 day billing period. Since we make only one measurement per day, this means that you may store large files for short periods and not be charged any additional amount.

[*] HIGH VOLUME DISCOUNTS

Customers requiring larger amounts of resources should consider Supernet Dedicated Internet Access. It provides 24 hour/day 7 day/week single line connection, 100 login IDs and 100MB of disk space, and 1GB of transfer volume for only HK$3500 per month. It may be implemented utilizing dial-up, or private leased circuit technology.

[*] PREPAYMENT DISCOUNTS

Billing is performed monthly. Payment is due within 30 days of invoice date. Prepayment discounts are available: Pay for 6 months and save 10% (HK$105). Pay for 12 months and save 20% (HK$420), which corresponds to a minimum monthly charge of just HK$140 per month! To register, please complete the New User Account Form and UNIX Login ID Form and return them to us along with the HK $175 sign-up fee.

FURTHER INFORMATION

Please read 'Frequently Asked Questions About Hong Kong Supernet'

Hong Kong Supernet
HKUST RandD Corporation Ltd.
Hong Kong University of Science and Technology
Clear Water Bay, Kowloon
HONG KONG
Phone: (+852)358-7924 Fax: (+852)358-7925
email: Info@HK.Super.NET

23Oct93

UNIX LOGIN ID FORM

HONG KONG SUPERNET

Please complete a copy of this form for each UNIX ID desired. One form should be filled out for each individual desiring a login. Additional logins may be requested using this form at any time. Please complete the form in English.

If you are a new customer, leave this blank. Other wise, enter your the account number listed on one of your HK Supernet billing statement.

HK Supernet Billing Account Number _____

Enter the full name of the person who will use this UNIX Login ID. If this is the same person listed on the New Customer Account Form, you may write 'SAME' here. Please enter all information requested. Note: Your formal email address will be of the form 'First.Middle.Last@HongKong.Super.NET'

First Name _____

Middle Name _____

Last Name _____

Address _____

_____

_____

_____

Telephone _____ Fax _____

UNIX LOGIN ID

UNIX Login IDs are limited to 8 characters. Please include a first choice and a second choice as common names may already be taken. Individual login names are up to you, but we recommend you follow one of these conventions:

First Initial, Middle Initial, Last Name: rdjones, ckyip,

First Name, Last Initial: bettyg, peterk, samsonj

Initals, Only: cky, rdj, bg

First Choice: |_|_|_|_|_|_|_|_|

Second Choice: |_|_|_|_|_|_|_|_|

PASSWORD NOTIFICATION(CHOOSE ONE)

We can notify you of your password when your account is created. Since the password con trols access to your account, it must be kept se cret. We can notify you fastest via fax, post, or telephone. If you are difficult to reach and have voice mail, please indicate whether it is OK to leave the information as a message. For security, the contact indicated on the New Customer Account Form (if they are different from the account ID applicant) will also be notified (via email or fax) anytime a new account is created.

[ ] By Secure Fax # _____

[ ] By email _____

[ ] By Post _____

[ ] By Telephone # _____

[ ] OK to Leave Message

All new users must also complete read and sign the Terms and Conditions page. Fax or mail all completed documents to:

Hong Kong Supernet HKUST RandD Corp, Ltd.
The Hong Kong Universit of Science and Technology, Clear Water Bay, Kowloon, HONG KONG Phone: (+852)-358-7924 Fax: (+852)-358-7925

For Internal Use:

DR:_____

PB:_____

UL:_____

23Oct93

New Customer Account Form

HONG KONG SUPERNET

All new customers should complete this form. Existing customers wishing to create new user IDs need only complete the Unix Login ID Form. Please complete this form in English.

Please enter the name of the organization that will be responsible for payments. If you are an individual then leave this entry blank.

Full Company Name _____

If you are an individual, enter your name. If you are an organization, enter name of person or department bills should go to ('accounts payable', for instance). This will be used as the contact information for any matters related to billing.

First Name _____

Middle Name _____

Last Name _____

Address _____

Telephone _____ Fax _____

PAYMENT OPTIONS (check only one)

[ ] By Cheque [ ] By Autopay

If you choose 'By Cheque', we expect payments by cheque, via return post. If you choose 'By Autopay', we will automati cally deduct the amount owed via the HK autopay system. Please obtain the Autopay Information Form from us.

SERVICES DESIRED Sign-up Fee (check only one)

[ ] Dial-up $ 175 [ ] Dedicated $ 3500

The sign-up fee must be paid by all new customers. This fee must be received by us before we can initiate service

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Optional Prepayment Discounts

Dial-up (check only one)

[ ] 6 Months $ 945 [ ] 12 Months $ 1680

Dedicated (check only one)

[ ] 6 Months $ 18900 [ ] 12 Months $ 33600

Significant savings can be realized by pre paying. 10% for 6 months, 20% for 12 months. For Dial-up, the amounts saved are as follow (HK$): 6 months: $105. 12 months: $420. For Dedicated, 6 months: $2100. Dedicated 12 months: $8400. If you select a pre-payment option, you may either waive the sign-up fee by mailing a cheque for the full amount to us, or just mail the sign-up fee now and we will invoice you the prepayment amount on your first month's bill.

New customers must also complete at least one Unix Login-ID Form and the Terms and Conditions page for each Unix Account ID desired. Mail or Fax all forms to us:

Hong Kong Supernet HKUST RandD Corp, Ltd.
Hong Kong Universit of Science and Technology
Clear Water Bay, Kowloon HONG KONG
Phone: (+852)-358-7924 Fax: (+852)-358-7925

For Internal Use:

Dd _____

PB:_____

A/N:_____ 23Oct93

TERMS AND CONDITIONS — HONG KONG SUPERNET

All Hong Kong Supernet customers should read and understand the following. Please sign and date this agreement and return to us along with your New Customer Account Form and UNIX Login ID Form.

1. The following words have these meanings in this Agreement unless the context demands otherwise:-

   "Services" -- Access to the Internet and any ancillary Internetwork-based technologies, consulting and other service

offerings from time to time provided by Hong Kong Supernet.

"Subscriber" -- Any person who has requested to use the Services.

"Hong Kong Supernet" -- Hong Kong University of Science and Technology RandD Corporation Limited and all other entities in volved in the provision of the Services.

"Third Party Content" -- All information, software and other content that can be accessed through or by virtue of the Services.

2. The Subscriber must pay Hong Kong Supernet any initial sign-up fee or monthly fee, and all other charges as may from time to time be notified to Subscriber by Hong Kong Supernet in accordance with this Agreement. The Subscriber must pay all applicable taxes relating to the use of the Services by the Subscriber. Subscriber shall be responsible and liable for and shall indeminify Hong Kong Supernet in respect of liability for any and all use of the Subscriber's account and all actions and costs incurred and for all use of the Services accessed through the Subscriber's account(s) or its passwords(s) or otherwise by virtue of the provision of the Services to the Subscriber.

3. Unless otherwise agreed a Subscriber's right to use the Services, or that of Subscriber's designated users, is not transferable and is subject to any limits or restrictions established by Hong Kong Supernet.

4. The Subscriber is responsible for and must provide all telephone and other equipment necessary to access the Services. Hong Kong Supernet reserves the right to disconnect or deactivate any subscriber equipment or software at any time without prior notice. In practice, this will only be done in situations where the equipment or software is interfering with other services of Hong Kong Supernet. Subscriber must comply with Hong Kong Supernet's requirements as regards access equipment and/or mode of access to and/or use of the Services.

5. The Services are supplied on an "as is" basis without any express or implied warranties save for those warranties implied or imposed by and which cannot be excluded or restricted under Hong Kong law. The entire risk as to quality and performance of the Services is with the user. In no event will Hong Kong Supernet or its employees be liable to anyone for any special, incidental or consequential damages arising from the use of (or inability to use) the Services, including, without limitation, damages resulting from lost data or lost profits.

6. Hong Kong Supernet reserves the right to amend any particular program, information or facility which it provides or may provide through the Services. Subscriber agrees to abide by all applicable laws (whether Hong Kong or the laws of any relevant jurisdiction) relating to the use of the Services and any Third Party Content. Subscriber must abide by generally accepted rules of conduct relating to proper use of Internet resources. The definition and interpretation of what constitutes such acts remain the sole right of management of Hong Kong Supernet. Persistent violation will be grounds for termination of this Agreement.

7. By one month's advance notice published over the UNIX Server,

Hong Kong Supernet may modify and amend this Agreement, services offered, operating procedures or any of its service fees, late charges and prices and may discontinue or revise any or all other aspects of the Services at its sole discretion. The Subscriber may, by serving one month's notice in writing to Hong Kong Supernet, terminate this Agreement.

8. Hong Kong Supernet will invoice the Subscriber on a monthly basis by post, electronic mail and/or facsimile transmission. Payment is due for the full invoiced amount. If the Subscriber does not pay within 30 days after the invoice date, late charges of 1.5% per month will be due and payable with respect to the outstanding balance.

9. If the Subscriber is in breach of any of the terms of this Agreement, including late payment of any invoices, then Hong Kong Supernet may, at its sole discretion either suspend the Subscriber's access to and use of the Services until such breach is remedied or terminate this Agreement and the Subscriber's access to and use of the Services. Reinstatement will require full payment of outstanding balance, plus applicable initial sign-up fee.

10. Should Hong Kong Supernet suspend or terminate the Services pursuant to Clause 9 the Subscriber has no right to any data stored and Hong Kong Supernet will be under no obligation to make such data or any copies of it available to Subscriber in any form what soever. Should this Agreement terminate for any reason whatsoever Subscriber data stored on Hong Kong Supernet's facilities will be explicitly erased without prior notice.

11. Neither the course of conduct between the parties nor trade practice will modify the provisions of the Agreement. If any provision of this Agreement is determined to be invalid the other provisions shall remain in full force and effect. The provisions of all obligations of and all restrictions on the Subscriber will survive the termination of this Agreement.

12. The Agreement is governed by the laws of Hong Kong and the Subscriber hereby submits to the non-exclusive jurisdiction of the courts of Hong Kong.

Signature _____

Date _____

Hong Kong Supernet HKUST RandD Corp, Ltd.
Hong Kong University of Science andTechnology
Clear Water Bay, Kowloon HONG KONG
Phone: (+852)-358-7924 Fax: (+852)-358-7925

23Oct93

Dial-In Instructions

HONG KONG SUPERNET

WHAT YOU WILL NEED:

[ ] User-ID
In order to connect to the Hong Kong Supernet Systems, you will need to obtain a User-ID. This is obtained by filing out a the Customer Information Form, available from HK Supernet.

[ ] Communications Software
If you are using a personal computer, you will need a communications software. This oftentimes comes with your stand ard software. If you are using Microsoft Windows on a PC, look in the Accessories Menu for the selection entitled Terminal. If you are using just DOS, you will need to acquire a separate communications program. There are many commercial and shareware communications software packages. They are often included when purchasing modems.

[ ] Modem
A modem is a piece of hardware which allows your computer to communicate over the telephone lines. If you have a PC, you can choose either a built-in modem card, or an external modem. They both perform the same. External ones allow you the option of connecting or easily transporting them to other PCs. The most important characteristic of a modem is transmission speed. The faster the speed, the higher the price. Hong Kong Supernet supports all standard speeds up to V.32bis (14,400 bits per second). Generally speaking, the faster the mo dem you buy, the more performance and economy you will receive from your Hong Kong Supernet connection. Another important characteristic of modems is error correction. This will eliminate garbage characters generated by noise on the telephone line. While Hong Kong telephone connections are generally very clean, it is still a very good idea to purchase a modem with error correction. Hong Kong Supernet supports V.42bis / MNP4 error correction.

Configuration

Once your modem and communications software are working together, you will need to set some parameters to connect to HK Supernet; Find your settings->communications, or similarly named menu inside your communications software. You will need to set the following items:

PARITY: None DATA BITS: 8 STOP BITS: 1 FLOW CONTROL: Hardware

Other parameters such as COM1 or COM2, and Baud
Rate are dependent upon the type of modem you are using and how it is configured. For Baud Rate always choose the fastest rate that your modem's documentation says it will support.

Telephone Numbers:

719-4125 (Telebit WorldBlazers - 16 lines)
719-4225 (ZyXEL U1496S - 4 lines)

LOGIN PROCEDURES:

1. Command your modem to dial 719-4125

2. Wait for your modem to issue a CONNECT message

3. Type <RETURN> <RETURN>. This is the same as <ENTER> <ENTER>.

4. You should see the following prompts; Enter the commands in Boldface. Replace User-ID and Password with those supplied to you by HK Supernet.

Annex Command Line Interpreter * Copyright 1991 Xylogics, Inc.
Checking authorization, Please wait... Annex login: User-ID Annex Password: Password

ts1-annex: rlogin hk

Welcome to Hong Kong Supernet

hk.super.net%

You are now logged on to the HK Supernet UNIX Server with full access to The Internet !

25Oct93

Frequently Asked Questions

HONG KONG SUPERNET

TELL ME MORE ABOUT THE INTERNET

The Internet is not a company. It is a vast, distributed, cooperative computer network. It currently consists of an estimated 14 thousand networks, 100,000 hosts, and 20 million users world-wide, and is growing very, very rapidly. Almost anyone can join directly by getting a con nection and a machine and agreeing to use something technical called "The TCP/IP Protocol", which is just a common language all the computer systems agree to use in order to communicate. Although the Internet began as just a network to connect government research labs and universities within the United States, it has grown to the point where over half of its members are commercial or ganizations, with over 30% of the total networks located outside of the USA.

WHAT IS AN "INTERNET SERVICE PROVIDER" ?

Internet Service Providers, like HK Supernet, are independent companies who provide access to the global Internetwork. HK Supernet also offers expertise on all matters relating to Internetworking technology. Internet working is a solution to getting computers of all different types to communicate with each other. Our main service, however, is access to the global Internet, and educational services on how to utilize it.

HOW IS HK SUPERNET DIFFERENT FROM OTHER ON-LINE SERVICES ?

Other on-line service offer databases, shareware libraries and other information services. In the case of HK Supernet, most of the value in our service is access to the vast Internetwork which includes thousands of information services. The majority of these services are free of charge however, there are a growing number of valuable commercial information services that charge their own fees. In either case, you are simply using the Internet as a transmission medium to get access to this information.

WHY IS GETTING CONNECTED TO THE INTERNET BETTER ?

Getting a connection to other on-line services gets you a closed set of functions. On the Internet, you get ac cess to a much larger and growing number of information sources. Many on-line services offer electronic mail within their own systems. With Hong Kong Supernet, you still get access to all the major on-line service's via their Inter net email gateways, but in addition, you get access to the tens of millions of direct Internet email users as well. Oth er services do not give their users access to a global data network that can transmit data around the globe in under a second.

IS IT TRUE THAT THE INTERNET IS HARD TO USE ?

There is a trade-off between regular on-line services and Internet access. With on-line services, you usually, get a simple, menu-driven system that is fairly easy to use, but restricted in its abilities. With Internet access, you trade off some ease in exchange for a great deal more power to do more things. The Internet is evolving, and there are many new tools that make things easier. HK Supernet realizes that education plays a vital role in learning to use the Internet, and therefore offers classes at no additional charge to its customers. HK Supernet also provides telephone assistance, help documents, and books.

WILL I HAVE TO LEARN UNIX TO USE THE INTERNET ?

Depending on what you want to do with your Internet access, you may need to learn a few commands on how to list directories, rename and remove files, etc. For the purposes of down-loading files or sending electronic mail, these commands shouldn't take more than several min utes to master. Most users will spend most of their time inside a few utilities like electronic mail, or usenet news. Again, we provide tutorial information to make it easy for beginners.

WHAT SOFTWARE DO I NEED ON MY PERSONAL COMPUTER ?

You can use any standard serial communications software package. Many systems come with the software included; Windows 3 for IBM-compatibles includes an applications called "Terminal" that will work, for instance. If you don't have the software you can either purchase a commercial package from a software dealer, or obtain shareware. Pro-comm and Crosstalk for the IBM and White Knight for the MacIntosch are examples of commercial packages that will work.

WHAT KIND OF MODEM SHOULD I BUY ?

The most important aspect to consider when selecting a modem is speed, measured in bits-per-second (bps). The faster the modem, the higher the price. The faster the modem is, however, the happier you will be with your HK Supernet connection. Modem technology is moving very fast however, and today the best value can be had by purchasing a V.32bis/14,400bps modem. Slightly less expensive V.32/9600bps modems will give satisfactory results. Error correction is also a very important feature which prevents telephone line noise from interfering with your transmis sions. Compression makes your data transmissions more efficient, Try to buy a modem that includes V.42 error correction with V.42bis compression.

To summarize, a V.32bis/V.42bis modem is best. HK Supernet uses Telebit Worldblazer and ZyXEL U1496S+ modems. WorldBlazers have superior perform ance over noisy IDD connections. ZyXELs

support a propri etary 19,200bps speed. If either of these features are important to you, you may wish to consider these particular brands.

If your budget is limited, you may purchase a slower, V.22/1200bps or V22bis/2400bps modem which will also work with HK Supernet dial-in modems.

WHY DON'T YOU CHARGE DIFFERENTLY FOR DIFFERENT MODEM SPEEDS ?

Other providers charge more for connections with faster modems. We feel that the faster your modem, the more efficiently you use our facilities, which saves us money. We also want to keep our billing overhead low by keeping it simple by charging just one rate. Why do you charge different rates for different times of the day ? Our normal dial-in charge is HK$25/hour between 9am and 9pm. We discount this to HK$10/hour at other times in order to encourage use of our modem pool which would otherwise go unused.

DOES HK SUPERNET PROVIDE FULL INTERNET ACCESS ?

Yes. Sometimes BBS and other on-line service provid ers will advertise that they have Internet access. Usually, they don't explain what kind of access that is, and what services their users can use. Oftentimes, their services are limited to indirect services such as electronic and Usenet News. Some do not allow you to participate by posting your own news articles. They probably do not allow you to trans fer files at high speed with ftp or make interactive connec tions anywhere on the Internet with telnet either. Neither do they allow real-time world-wide group conversations with IRC chat either. Hong Kong Supernet has a full Internet connection which means that our customers enjoy all these ser-vices and more.

HOW IS SUPERNET CONNECTED TO THE INTERNET ?

Supernet operates a dedicated (24hour per day) 64 thousand bit per second, private leased circuit connecting its Hong Kong facilities to Performance Systems Interna tional (PSI) in Santa Clara, California, USA. PSI operates a state-of-the-art Frame Relay network which spans the USA. They provide HK Supernet with high-reliability connectivity to all the major Interex-changes - CIX West, and MAE East.

EXPLAIN HOW SUPERNET DIAL-UP CHARGES WORK

First, our basic notion of charging revolves around a Billing Account. This corresponds to a single company or in dividual to whom we send one bill. This Billing Account can have up to UNIX 25 login IDs associated with it. Each one of these IDs represent one person (or machine) which may dial-in. Our minimum billing for a standard dial-in billing ac count is HK$175 per month. We charge for two basic kinds of resources - disk space and connect time. We may charge for specialized services such as outgoing modem in the fu ture.

Each billing account can store a total of up to 2.5Mega bytes(MB) of data at no charge beyond the HK$175 mini mum monthly fee. Beyond 2.5MB we charge HK$20 per megabyte month. For instance, if you your billing account has 3 logins with a total of 3.5MB of disk usage, the charge would be (3.5mb usage - 2.5mb included at no charge) x HK$20 for a total of = HK$10.

The disk billing is measured once per day (at a random time), then averaged over the 30 day billing period. This way, if you may use your account to temporarily store files in transit for little or no charge, as long as you delete them as soon as you are finished.

Connection time is charged at two rates depending on time of day. Peak time is between 0900 and 2100, and Off peak time is from 2100 to 0900 the next day. During peak time, connection charge is HK$25 per hour. During Off-peak the connection charge is HK$10 per hour.

If you are dialled in when the periods transition, we will change the rate accordingly.

Here is an example bill for a billing account with one user login. During the 30 day billing cycle, this user was con nected 4 hours during peak-time and 3.2 hours during off peak. In addition, he had 1.5MB of disk usage above the 2.5 which come for free:

Resource	Amount	Rate	HK$
Connect Time:			
Peak-time	4.0 HRS	x $25	= $100
Off-peak	3.2 HRS	x $10	= $32
Disk Usage:	1.5 MB	x $20	= $30
	Total:		$162
	Minimum Billing:		$175

As you can see in this example, the user's total charges are HK$162. Since this is below the HK$175 minimum per billing account, they are charged HK$175.

IF I AM CONNECTED FOR 1 HOUR AND 1 MINUTE, AM I CHARGED FOR 2 HOURS ?

No. We charge within the nearest second, so there is no worry about getting charged for time you weren't actually connected.

HOW CAN I MINIMIZE MY BILL ?

There are alot of ways; First, a fast modem will mimim ize connect time. Second, if you remember to delete your files, you can save money on disk charges. Third, you can take advantage of low, off-peak connect time. Fourth, you can arrange for your computer to call and transfer your data automatically.

WHAT IF I RUN UP A REALLY HUGE BILl ?

For each dial-up billing account, we limit the charges to HK$3500 per month. For example, if you dialled in and stayed connected continuously for 4 days, your connect charges would exceed $3500, but after this point, we would automatically consider you in our Dedicated category of customers, which gives you flat-rate access and higher re source limits (100mb of storage, 100 logins, 1GB of transfer credits).

ARE THERE ANY HIDDEN COSTS ?

Beyond the charges as described, there are no additional charges from HK Supernet. You must of course, con sider the cost of operating your PC, modem, and the telephone line which you use to dial-in.

DO YOU OFFER OVERSEAS SERVICE ?

As far as dial-in goes, we currently operate only our Hong

Kong dial-in modem pool at this time. Foreign con cerns wishing to dial-in must incur an international direct dial rate from wherever they are into Hong Kong. For areas immediately adjacent to Hong Kong such as Macau, and Guangzhou, this may very well be the most reasonable choice.

CAN MY COMPUTER CATCH A VIRUS ?

There is no recorded incident of a computer catching a virus through a dial-in service. However if you download an executable program, such as one from a shareware archive, you are exposing yourself to that possibility. Note, however that you can download Virus checker programs which make things a little safer.

WHAT ARE SOME BUSINESS APPLICATIONS OF THE INTERNET ?

One possible use is to use the Internet for cheap international communications. Suppose your company is collab orating with 2 other companies, one in the UK, one in the USA, and you need to exchanged data rapidly. If the com panies in the USA and UK also arranged for Internet access in their areas (we have lists of providers), then you could transfer the equivalent of a floppy disk full of information in just a few minutes.

Another growing application is 'fax tunnelling', whereby users avoid international long-distance telephone charges by sending electronic mail over the internet which converts to fax messages only when they arrive in their local calling area.

Companies may also find access to the vast and grow ing number of information services valuable - there are al ready hundreds of libraries already on-line.

DESCRIBE USENET NEWS

Usenet news is a distributed bulletin board system where anyone may read and post articles in any one of over 2000 topics or categories covering many different topics in cluding culture, politics, science, computers, etc. It is a very good resource to find out solutions to very specific technical problems, oftentimes, and also an excellent place to broad cast your opinions, or listen to others on any subject near and dear to your heart.

TELL ME MORE ABOUT CLARINET NEWS

Clarinet news is a special category of Usenet news which is actually UPI commercial news wire. Users can only read these groups, not post to them. They are organized into categories including financial, headlines, features and tech nical categories. This is not a service available everywhere on the Internet, HK Supernet has paid for a subscription to the service.

WHAT IS GOPHER ?

Gopher is a software tool that makes navigating the In ternet much easier. When you type 'gopher' at the command prompt, it will take you out of UNIX and into a simple system of menu lists which you can select by number. HK Supernet operates its own gopher server which provides information about ourselves. You may explore the hundred of other gopher servers on the Internet by just selecting them on our server's menu list.

Since gopher makes the Internet so much easier to use, HK Supernet plans to expand its gopher server. Companies looking to market their services on the Internet may consider using gopher as a presentation medium.

WHAT IS IRC CHAT ?

IRC Chat is a software tool that lets you converse with other people who are currently logged in anywhere on the Internet. It is sort of like a dinner table discussion where you are able to see many people's responses at the same time, and put in your own comments to the group as well.

WHAT IS 'TALK' ?

Talk is software that allows you to converse with one other person logged in anywhere on the Internet. Their hosts must support the talk software also, of course, but this is a very inexpensive way for you to converse with your friends overseas when compared to IDD phone conversations !

WHAT IS WAIS ?

Wais stands for "Wide Area Information Service", and is a system for searching the network for information. You provide a set of keywords, and it will fetch documents matching those keywords. It is a very good general research tool, acting much like a reference librarian.

WHAT ARE ANONYMOUS FTP ARCHIVES ?

FTP stands for 'File Transfer Protocol', one of the basic software utilities supported widely on the Internet. The 'Anonymous' means that anyone can access these ar chives. This anonymous ftp archives are the real storehous es of free information, software, sounds and images available to everyone on the Internet.

WHAT IS ARCHIE ?

Archie is an 'archive server' system which knows about most of the anonymous FTP archives, and tells you where to find things.

WHERE CAN I GO FROM HERE ?

There is lots more help available on- line to HK Supernet subscribers. If you don't have your HK Supernet account yet. Fill out the New Customer Account Form, UNIX Login ID Form, and sign the Terms and Conditions form. Mail them along with a cheque for HK$175 to us. We will set up your account as soon as we receive your cheque!

Hong Kong Supernet HKUST R&D Corporation, Ltd.
Hong Kong University of Science and Technology Clear Water Bay, Kowloon HONG KONG Phone: (+852)358-7924 Fax: (+852)358-7925
email: Info@HK.Super.NET 26Oct93

INTERNET PROVIDER: JVNCNET
(GLOBAL ENTERPRISE SERVICES, INC.)

Company & Service Overview

- JvNCnet is T1 computer network using Internet technology and is owned by Global Enterprise Services, Inc.

  - Provides both national and international internetworking access.
  - Augmented by the company's own satellite system to provide Internet services to remote clients.
  - Has connections to CIX, NSFnet, and ESNET.
  - Provides both public access to the Internet Global Network or provides private internet solutions.
  - Used for both commercial (60%) and educational (40%) purposes.
  - GES provides

- In addition to its dedicated and dial-up access services, GES provides Network Design and Consultation Services, Service Implementation, and Ongoing Operations including:

  - Equipment procurement, testing, configuration, and installation (at customer site)
  - Registration services:
    - Domain Name
    - IP addressing
    - Directory Service Entry
  - Supports speeds from 19.2Kpbs to 4.5Mpbs
  - No usage restrictions
  - Training
  - Use of e-mail, network news, telnet, ftp, gopher
  - Network news feed
  - Help desk
  - 24 hour, 365 day network surveillance

GES Host Connection Services Summary

Provide lost-cost dial-up connectivity to the Internet. Computer and modem required.

Service	Description	One Time Fee	Monthly Fee	Quarterly Fee	Annual Fee
Dialin'Tiger	Full Internet access via SLIP connection: • e-mail • news • FTP • telnet • UNIX account	$99	$120	$354	$1,356
Dialin'Tiger II	Same as Dialin'Tiger, but without UNIX account	$99	$99	$291	$1,116
Tiger Mail	Electronic mail and news only	$36	$19	$57	$228
Dialin'Terminal	Terminal access only to customer's Internet-connected host system.	$36	$19	$57	$228

Notes:

- Quarterly and Annual Fees apply if paid one quarter/year in advance.
- Terminal access use 800 number exclusively.
- 800 number is available for other options at $10/hr.
- Volume discounts are available for multiple accounts.
- Router located on customer site; customized configuration by GES by host, network and type of application.

Summary of GES Gateway Connection Service Offerings

For enterprise LAN or network connectivity to the Internet.. Requires TCP/IP software on an Ethernet or Token Ring. All other hardware, software, and installation provided by GES.

	One Time Membership	Annual Memebership	Estimated Annual Line Cost
Tiger T1 (1.5 Mbps)	$13,850	$36,750	$10,600
Tiger 2T (3.0 Mbps)	$27,800	$49,500	$21,200
Tiger 3T (4.5 Mbps)	$38,500	$64,500	$31,800
Tiger 19.2	$13,817	$10,058	$1,600
Tiger 56	$9,770	$15,400	$4,700
Tiger 128	$13,500	$10,600	$10,600
Tiger 256	$13,500	$25,560	$21,560
Tiger 512	$13,500	$31,560	$10,600
Tiger 56-E	$9,700	$10,058	$4,700
Tiger 128-E	$13,500	$24,000	$10,600
Tiger 512-E	$13,500	$35,500	$10,600

Notes:

- Educational and nonprofit organizations receive a 10% discount of Gateway Connection annual membership.
- One Time Membership includes all necessary equipment, phone line installation, pre-installation survey, IP address and domain name applications, connection installation and consulting to establish network services. Equipment (routers, etc.) located on customer site. Routers must be dedicated for Internet access; maintained by GES (included in fees). Monthly reports not available and no maintenance resonsibility if GES does not manage router.
- Annual Membership includes ongoing maintenance, operations, information and engineering services.
- Annual Line Cost represent the cost of the leased circuit between member and the nearest JvNCnet Access Point; average costs are provides as a reference.
- No compensation for service problems.

Global Enterprise Services, Inc.



International Service Offerings

GES Public and Private Global Networking Services

GES' network, JvNCnet, was established seven years ago as the first T1 computer network in the world using Internet technology to link research clients across the United States. In addition the network provided Internet services using its own Satellite system to remote clients. JvNCnet became an international network six years ago, extending its links to Europe, Asia and South America.

Whether a GES Member is interested simply in access to the Public Internet Global Network, or a private internet solution, GES supports a standard connection service which, combined with integration services, provides a cost-effective and professionally managed private virtual network.

GES in-country support is accomplished by a network of highly technical personnel or Country Managers (in selected countries). The Country Managers oversee the delivery of services to GES Members in the country providing an interface for technical as well as administrative support.

GES' experience as an international provider of advanced internetworking services and its in-country presence, and support personnel, bring a global internetworking solution to its clients.

Access to the Global Internet

The Internet is the largest computer network in the world. It has currently more than 17,000 networks in over 100 countries. The Internet can be considered like a public data network with no central authority or administration. Each of the 17,000 networks are independently managed; however, all the networks share a common naming and addressing scheme and use the TCP/IP protocol suite. There is great wealth of information and people on the Internet.

GES' network, JvNCnet is connected to the outside Internet in several ways, namely (i) via NSFNET (US National Science Foundation), (ii) via ESNET (US Department of Energy), and (iii) via CIX (Commercial Interconnect Exchange).

In the second quarter of 1994, GES will be part of the new architecture of the Internet as one of the few Network Service Providers connected to the three primary Network Access Points in New York City, Chicago, and California. In addition, GES will connect to other Network Access Points as they become available in places like Washington, DC and Boston. GES currently has facilities and provides service to clients in all those locations, with Chicago coming on line in March, 1994.

GES provides the following services internationally. Please see the service-specific documents for additional details.

Global Network Access Services

IG-64 [1,2]	Internet access for the member's network provided on a leased private 64kbps line from the United States.
IG-64-VSAT [1,2]	Internet access for the member's network provided on a Very-Small Aperture Satellite shared access to the GES VSAT network.

WHERE:

1. Installation performed on-site by GES personnel. The installation includes testing and configuration of the equipment necessary for the service and on-site training on basic navigation of the Internet.
2. Turnkey service with equipment and circuits provided by GES and monitored and maintained around the clock, 7 days a week, 24 hours a day.

Single Computer Access Services

IG-UUCP	This service is based on the transmission of files for electronic mail and network news utilizing the Unix-to-Unix-Copy (UUCP) protocol. This is performed on a dial-up basis where the calls are initiated from the United States to the users' computer.
IG-14.4H	Full Internet access for the member's computer on a dial-up basis, where the member calls the GES network in the United States.

IG-64-VSAT Services for Central, South America and Europe

Overview

IG-64-VSAT service is a complete turnkey Internet service attachment to GES' Global Network (JvNCnet) over its Very Small Aperture Satellite (VSAT) component and includes access to the Public Internet. The VSAT technology allows for direct connection to the Member premise without the need for using the infrastructure of the local telephone company in the Country. The VSAT provides additional benefits in terms of a cost effective solution due to direct economies of scale. The service is complemented with training, consultation, registration services and other value added items to make it the most complete and cost-effective solution available for international connectivity.

Service Benefits

The benefits of the IG-64-VSAT Service are of two types:

1. Access to the Internet

    - Size of the Internet
        - Largest collection of computer networks in the world
        - Hundreds of databases (commercial, government and academic) available on fully interactive communications
        - Millions of people reachable via electronic mail
        - Largest bulletin board in the world
        - Continuing growth for past twenty years and into the future
    - Performance of communications across the Internet
    - Availability of public (free) information

2. IG-64-VSAT Specific benefits

    - Turn-key service means that the Member contracts for a complete service.
    - Modular design allows for additional locations to be added without affecting the operations of the network.
    - VSAT technology is a convenient way of connecting sites which do not require the full capacity of an international private line twenty-four hours a day, seven days a week. Also, VSAT technology provides a solution to the "last mile" problem when the telephone company can not provide quality communication all the way to the Member premise.
    - Cost-effectiveness due to GES' large membership base, which allows for greater economies of scale which are applied to reducing and optimizing the costs of the service.

GES Global Network Services Description

Network Design & Consultation Services

- GES provides a modular service attachment where the equipment at the Member Premise (ENS) attaches to the GES Backbone network in the optimal way.
- GES Consultation Services extend to the Member's internal requirements for network servers, accounting applications or any other software solution. This customizable service is provided at an additional cost depending on the specifics of the task requirements and contributes to the completeness of GES offerings.

Service Implementation

- Project Plan with weekly progress reports and updates on timeframe for completion of each location
- Site survey
- All equipment procurement, testing, configuration and installation
- Registration Services
  - Domain Name
  - Internet Address
  - Directory Services Entry (whois)
- Name Server installation
- Network News Server installation
- Training on-site during acceptance of the service
  - Navigation of the Internet
    - Use of electronic mail, network news, telnet, ftp, gopher
    - Basic resources available on the Internet
  - How to access and use the help desk
- Formal Acceptance Certification

Ongoing Operations

- Monitoring of the network access seven days a week, twenty four hours a day
- Preventive maintenance scheduled twice a week as necessary
- Corrective maintenance performed around the clock by expert personnel
- Monthly Customized operational reports detailing:
  - Utilization of the service
  - Availability and Mean Time To Recover (including description of all significant events)
  - Performance
- Security and Validation procedures performed around the clock
- Help desk around the clock
- In-country support by country personnel provides a single-point-of-contact for technical and administrative functions (where available)
- Secondary Domain Name Service
- Network News Feed
- Monthly Newsletter

Network Design

The overall network is built as a virtual network which relies on fiber optic technologies in some cases, and VSAT satellite technology in others, and is based on the TCP/IP protocol suite, providing an internetworking environment that is application- and vendor-independent (interoperable) and transparent to its users.

The connection is provided as a standard configuration (End Nodal System, or ENS) which is based on an attachment of the Member Local Area Network (LAN) to the JvNCnet Wide Area Network.

The configuration for the ENS is based on an internetworking router (cisco Systems unit) with a local area network interface and a wide area network interface to connect to the VSAT equipment. The components of the ENS are UPS equipment, a diagnostic modem (the Member needs to provide telephone line access to this modem), and fall-back unit in case the VSAT fails (the fall-back unit needs a telephone line provided by the Member).

GES utilizes Hughes Network Systems VSAT equipment which is dominant in the United States market. The satellite used is the Intelsat. The configuration is for an Outroute of 128kbps and an Inroute of 64kbps TDMA to the member location.

Estimated Implementation Timeframe

A detailed project plan will be performed once the proposal is approved. This will be followed up with a site survey which will give GES and the member an accurate timeframe for the installation.

GES Global Network Services Description

Network Design & Consultation Services

- GES provides a modular service attachment where the equipment at the Member Premise (ENS) attaches to the GES Backbone network in the most optimal way.

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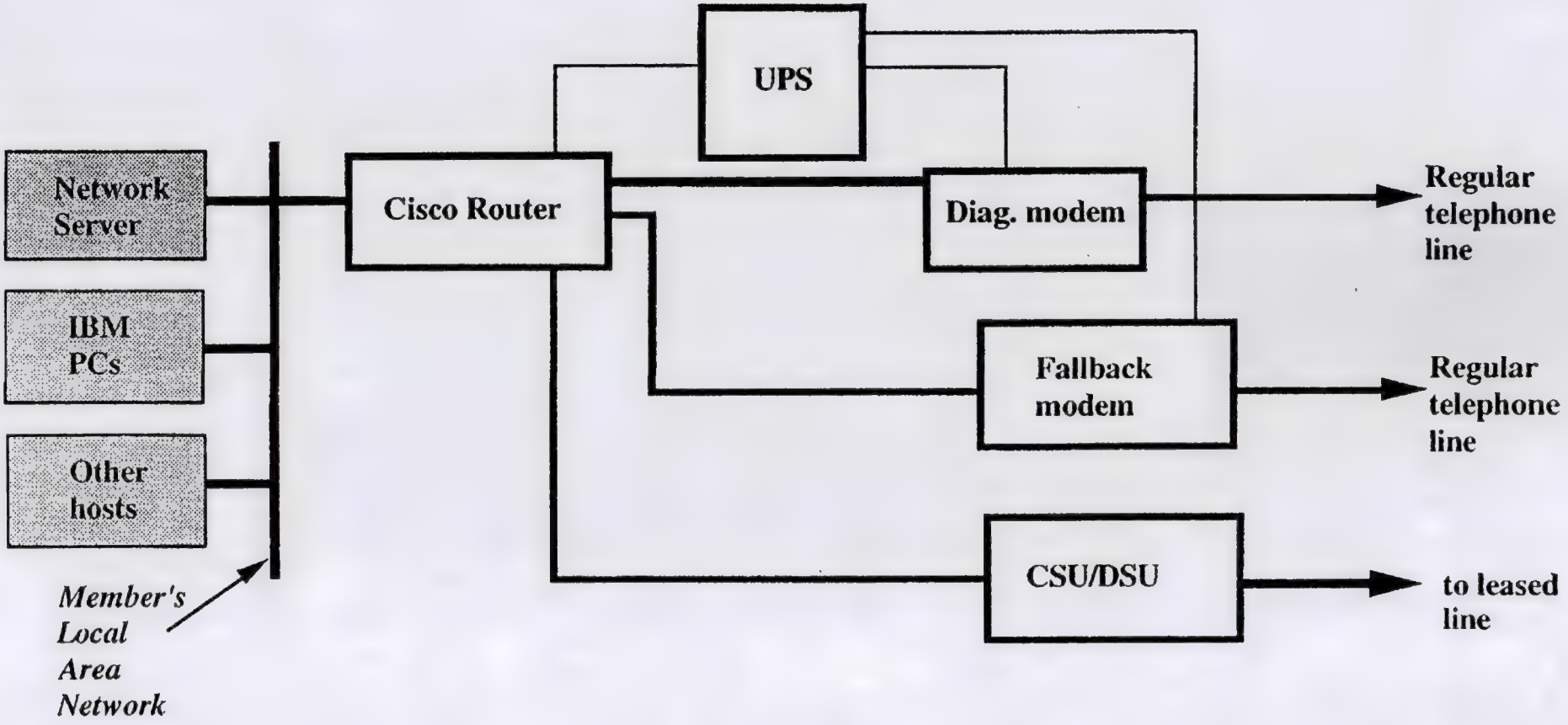
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Ongoing Operations

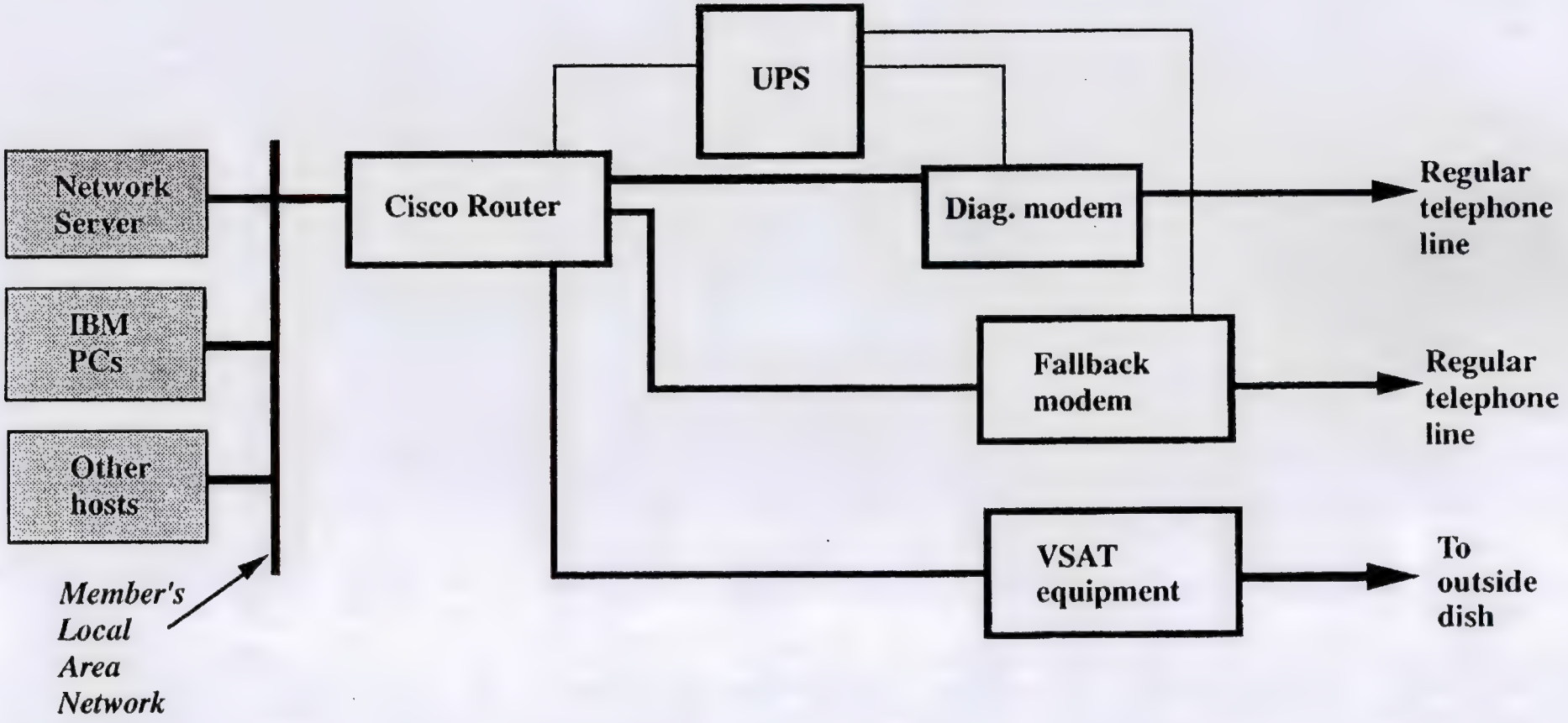
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- In-country support by country personnel provides a single-point-of-contact for technical and administrative functions (where available)
- Primary Domain Name Service
- Network News Feed
- Monthly Newsletter

Member Premise Configuration



Note: shaded equipment is provided by the Member

Member Premise Configuration



Note: shaded equipment is provided by the Member

IG-64 Services

Overview

IG-64 service is a complete turn-key internet service attachment to GES' Global Network (JvNCnet) over private dedicated leased line to the United States and to the Global Public Internet. The service is complemented with training, consultation, registration services and other value added items to make it the most complete and cost effective solution.

Service Benefits

The benefits of the IG-64 Service are of two types:

1. Access to the Internet

   - Size of the Internet
     - Largest collection of computer networks in the world
     - Hundreds of databases (both commercial, government and academic) available on fully interactive communications
     - Millions of people reachable via electronic mail
     - Largest bulletin board in the world
     - Continuing growth for past twenty years and into the future
   - Performance of communications across the Internet
   - Availability of public (free) information

2. IG-64 Specific benefits

   - Turnkey service means that the Member contracts for a complete service.
   - Modular design allows for additional locations to be added without affecting the operations of the network.
   - The private line can be used to carry as much traffic as the Member needs to send without sharing the access with any other organization.
   - Cost-effectiveness due to GES' large membership base, which allows for greater economies of scale which are applied to reducing and optimizing the costs of the service.

Network Design

The overall network is built as a virtual network which relies on fiber optic technologies (in some cases), and VSAT satellite technology in others and is based at the higher level on the TCP/IP protocol suit, providing an internetworking environment that is application – and vendor-independent (interoperable) and transparent to its users.

The connection is provided as a standard configuration (End Nodal System, or ENS) which is based on an attachment of the Member local area network (LAN) to the JvNCnet Wide Area Network.

The configuration for the ENS is based on an internetworking router (cisco Systems unit) with a local area network interface and a wide area network interface to connect to the leased line. The other components of the ENS are UPS equipment, diagnostic modem (the Member needs to provide telephone line access to this modem), and fall-back unit in case the leased line fails (the fall-back unit needs a telephone line provided by the Member).

Estimated Implementation Timeframe

A detailed project plan will be performed once the proposal is approved. This will be followed up with a site survey which will give GES and the member an accurate timeframe for the installation.

TOTAL P.14



GLOBAL ENTERPRISE SERVICES, INC.

JvNCnet℠

Host Connection Services

Highlights

- Four dial-up options meet any user requirement
- Optional 800 number provides national access
- Easy-to-use software interface
- Experienced Internet provider
- High-quality support and network availability
- No usage restrictions
- User meetings
- Flat monthly fee + connection cost

The Service

Global Enterprise Services, through the JvNCnet network, offers seven years of experience in providing service to over two hundred commercial and academic organizations nationally and internationally. GES host services are designed to provide Internet connectivity via a dial-up connection, to a small organization, individual or traveler, providing access to over one million other computers and many resources on the Global Internet.

GES state-of-the-art facilities and experienced staff provide high quality communication services to an ever-increasing number of customers. Through electronic discussion lists, newsletters, user meetings and affinity group interactions, GES learns from its member institutions of their needs and interests. This process is quickly reviewed and implemented to provide enhanced value services.

The host services are an ideal way for any organization to take advantage of the many resources available on the Internet at a low cost. The only requirement to join the JvNCnet host service is to have a computer and a modem. We take care of the rest.

National and International access

GES operates nationally and maintains connections currently to four countries. Through the National Science Foundation network (NSFNET), JvNCnet has access to over 10,000 networks in over 100 countries. JvNCnet also has access to the United States Department of Energy network (ESnet) and through it to all DOE facilities and laboratories.

Internet access is vital to commercial, academic and governmental organizations alike. Through GES, members can communicate with over four million people in about 100 countries, and remotely access unique resources and commercial information service providers, thus eliminating unnecessary network connections. Improve your organizational productivity by accessing vendors, users and facilities over the most advanced state-of-the-art network in the world.

Support and Service

GES' support policy is to provide integrated, turnkey, high-quality service. The network is operated by professional staff twenty-four hours a day, seven days a week, with hotline support for host services members Monday-Friday, 8 a.m. to 8 p.m. EST. Attention to our members is key toGES' success. Through quarterly user meetings and affinity groups discussions, GES learns of ways in which to address new requirements or value added capabilities to implement on the network. This innovative process is never ending and keeps GES in the forefront of technology and customer support.

GES • 3 Independence Way • Princeton, NJ 08540 • 1-800-35-TIGER

Features	Benefits
Experience	GES offers over seven years' experience providing state–of–the–art networking to a rapidly growing customer base.
Internet Access	National and International access to 19,000 networks in 125 countries. Backbone Nodes are currently located nationwide. Direct International access to four countries.
Unrestricted Use	Commercial use of JvNCnet is allowed. * Use of the Host Connectivity Services is unlimited. Idle connections will be terminated after 30 minutes.
Connectivity Options	GES offers host connectivity services to meet all access requirements:
Dialin'Tiger	Dialin'Tiger: Full Internet access, via SLIP connection, including mail, news, ftp and telnet, plus a UNIX account for members who require additional versatility.
Dialin'Tiger II	Dialin'Tiger II: Full Internet access, including mail, news, ftp and telnet, without the UNIX account. The choice for small businesses and individuals who want access to a wide variety of resources.
Tiger Mail+	Tiger Mail+: Electronic mail and news only. Perfect for small businesses and individuals with initially limited access requirements.
Dialin'Terminal	Dialin'Terminal: Terminal access only. Excellent for travelers who need only to connect to their business' computer.
Software Interface	An easy-to-use SLIP (Serial Line IP) software interface and documentation are provided with every service. GES currently supports interfaces for Macintoshes and PCs. Members with UNIX workstations may use Morning Star Technologies' PPP or other SLIP software. NOTE: Macintosh users must have 2MB RAM to run SLIP. PC users must have an NS 16550 high speed UART chip.
National 800 Number	An 800 number is optional for Dialin'Tiger, Dialin'Tiger II and Tiger Mail+ members, and is the backbone for Dialin'Terminal members. Users are charged for actual time on the system.
V.32bis Modems	GES uses Telebit T3000 V.32bis modems operating at speeds up to 14.4kbps. GES offers these same modems to members at a greatly reduced price.
Hotline Support	Hotline support is available for all Host Connectivity members from 8 a.m. to 8 p.m. ET to answer operational and informational concerns.
Value Added Connectivity	GES offers members much more than connectivity. Benefits of GES membership include: Newsfeed of all newsgroups at no cost; Monthly newsletter; Members' Meetings; GES Training Program discounts.
Pricing	Usage–insensitive pricing, flexible payment policies and volume discounts make GES' Host Connectivity services affordable for all organizations and individuals. Visa and MasterCard accepted.
For More Information	Global Enterprise Services, Inc. 3 Independence Way Phone: 1-800-35-TIGER Princeton, NJ 08540 Fax: (609) 897-7310 E–mail: market@jvnc.net

* restrictions may apply when using other networks beyond JvNCnet



Rate Structure (cont'd)

Host Connection Services

Members dial into the nearest JvNCnet Access Point. An optional 800 number is available at $10 per hour.*

	One Time	Monthly Cost	Quarterly Cost (1)	Annual Cost (2)
Dialin'Tiger	$99	$120	$354	$1,356
Dialin'Tiger II	$99	$99	$291	$1,116
Tiger Mail+	$36	$19	$57	$228
Dialin'Terminal	$36	$19	$57	$228

* Dialin'Terminal uses the 800 number exclusively.

Host Connection Services Volume Discounts

	One Time	1-25 Accounts	26-50 Accounts	51-100 Accounts
Dialin'Tiger	$99	$120	$118	$113
Dialin'Tiger II	$99	$99	$89	$84
Tiger Mail+	$36	$19	$19	$18
Dialin'Terminal	$36	$19	$19	$18

Software

	Price
Synergy Software VersaTerm	$90
Morning Star Technologies PPP (3)	$400
FTP PC/TCP	$350

Hardware

	Price
Telebit T3000	$635
Datability Mux/Router	$2,799
Netblazer NS2-1E	$2,999

Books and Publications

Please refer to attached Book Order Form.

Consulting Services

Rate per hour (4)	$200

1 Member pays one quarter in advance.
2 Member pays one year in advance.
3 One copy per institution, for the purpose of Internet access. Additional copies are $795 each.
4 Tax and travel additional.



GLOBAL ENTERPRISE SERVICES, INC.

JvNCnet℠

Gateway Connection Services

Highlights

- Experienced Internet provider
- High-quality support and network availability
- Turnkey service
- Wide range of options: 19.2kbps to 4.5Mbps
- No usage restrictions
- Standard and Customized Security options
- User meetings
- Flat-fee, flexible pricing

The Service

Global Enterprise Services, through the JvNCnet network, offers seven years of experience in providing service to over two hundred commercial and academic organizations nationally and internationally. GES gateway services are designed to provide Internet connectivity to a corporate or academic TCP/IP network, allowing its computers access to over one million other computers and many resources on the Global Internet.

GES state–of–the–art facilities and experienced staff provide high quality communication services to an ever–increasing number of customers. Through electronic discussion lists, newsletters, user meetings and affinity group interactions, GES learns from its member institutions of their needs and interests. This process is quickly reviewed and implemented to provide enhanced value services.

The Gateway Services are an ideal way for any organization with a local area network or networks to take advantage of the many resources available on the Internet. The only requirement to join the GES Gateway Service is to have a computer with TCP/IP software on an Ethernet or Token Ring network. We take care of the rest.

National and International access

GES operates nationally and maintains connections currently to four countries. Through the National Science Foundation network (NSFNET), JvNCnet has access to over 7,500 networks in over 100 countries. JvNCnet also has access to the United States Department of Energy network (ESnet) and through it to all DOE facilities and laboratories.

Internet access is vital to commercial, academic and governmental organizations alike. Through JvNCnet, members can communicate with over four million people in about 100 countries, and remotely access unique resources and commercial information service providers, thus eliminating unnecessary network connections. Improve your organizational productivity by accessing vendors, users and facilities over the most advanced state–of–the–art network in the world.

Support and Service

GES' support policy is to provide integrated, turnkey, high-quality service. The network is operated by professional staff twenty-four hours a day, seven days a week. Attention to our members is key to GES' success. Through quarterly user meetings and affinity groups discussions, GES learns of ways in which to address new requirements or value added capabilities to implement on the network. This innovative process is never ending and keeps GES in the forefront of technology and customer support.

GES • 3 Independence Way • Princeton, NJ 08540 • 1-800-35-TIGER

Features	Benefits
Experience	GES offers seven years' experience providing state–of–the–art networking to a rapidly growing customer base.
Internet Access	National and International access to 10,000 networks in 110 countries. Backbone Nodes are currently located in seven states, with expansion planned as needs arise. Direct International access to four countries.
Unrestricted Use	Commercial use of JvNCnet is allowed *
Turnkey Installation	JvNCnet installation includes the following: Domain name and address registration; equipment and telephone lines ordered, tested, configured and installed by GES staff; pre-installation visit and survey; service manual; formal cut-over and acceptance; two day on-site consulting on Network News, Domain Name Service, Sendmail.
Turnkey Operations	JvNCnet is operated twenty-four hours a day, seven days a week by an experienced, professional staff, providing end–to–end operations across the Internet, with an availability† better than 99.95%, and an MTTR† under 2 hours. Members receive detailed monthly operations and utilization reports, and weekly advanced notice of preventive maintenance.
Connectivity Options	GES Gateway Services meet all connectivity needs: Tiger 3T (4.5Mbps); Tiger 2T (3.0Mbps); Tiger T1 (1.544Mbps); Tiger 512 (512kbps); Tiger 256 (256kbps); Tiger T1–E (128kbps); Tiger 56 (56kbps); Tiger 56–E (56kbps); Tiger 19.2 (19.2kbps)
Upgrade Plan	Members incur no one–time costs for service upgrades. A utilization assessment determines the need for an upgrade, and duplication of services ensures a transparent upgrade without interruption of service. New services are thoroughly tested and formally accepted when operational.
Value added connectivity	GES offers members much more than connectivity. Benefits of GES membership include: Quarterly newsletter; Affinity groups and user meetings; Additional consulting available at standard fees; GES–developed network operation and management tools; News–feed of all newsgroups at no cost; GES Symposium program discounts.
Effective Security	Security procedures are customized based on members' needs. Router configurations are customized by host, network and type of application. Standard security procedures are clearly explained to members, and GES notifies members of all security alerts.
Pricing	Usage–insensitive pricing, flexible payment policies and academic discounts make JvNCnet affordable for all organizations.
For more information	Global Enterprise Services, Inc. 3 Independence Way Phone: 1-800-35-TIGER Princeton, NJ 08540 Fax: 1-609-897-7310 E–mail:market@jvnc.net

* restrictions may apply when using other networks beyond JvNCnet
† monthly average



GLOBAL ENTERPRISE SERVICES, INC.

JvNCnet℠

GES Rate Structure (July, 1993)

Educational and nonprofit organizations receive a 10% discount of the Gateway Connection annual membership fee. All prices are subject to change with or without notice.

Gateway Connection Services
Standard Services and Business Hour Services*

	Tiger T1	Tiger 2T	Tiger 3T
One Time Membership (1)	$13,850	$27,800	$38,500
Annual Membership (2)	$36,750	$49,500	$64,500
Estimated Annual Line Cost (3)	$10,600	$21,200	$31,800

	Tiger 512	Tiger 256	Tiger 128
One Time Membership (1)	$13,500	$13,500	$13,500
Annual Membership (2)	$31,560	$25,560	$21,560
Estimated Annual Line Cost (3)	$10,600	$10,600	$10,600

	Tiger 56	Tiger 19.2
One Time Membership (1)	$9,770	$13,817
Annual Membership (2)	$15,400	$10,058
Estimated Annual Line Cost (3)	$4,700	$1,600

* Premier Services available @ additional 5% on membership fee.

Economy Gateway Services

	Tiger 56-E	Tiger 128-E	Tiger 512-E
One Time Membership	$9,770	$13,500	$13,500
Annual Membership	$10,058	$24,000	$35,500
Estimated Annual Line Cost	$4,700	$10,600	$10,600

1 One Time Membership includes all necessary equipment, phone line installation, pre-installation survey, IP address and domain name applications, connection installation and consulting to establish network services.

2 Annual Membership includes ongoing maintenance, operations, information and engineering services.

3 Annual Line Cost represents the cost of the leased circuit between member and the nearest JvNCnet Access Point; average costs are shown for reference only-actual costs may vary.

GES • 3 Independence Way • Princeton, New Jersey 08540 • 1-800-35-TIGER

INTERNET PROVIDER: NEARNET

Company & Service Overview

- NEARNET is a regional provider of dial-up and leased-line access service to the Internet for New England.
  - 65% of its membership use it for commercial purpose; 35% for research library, educational, and not-for-profit.
  - Used for research, education, innovation, and general purpose communication.
  - Is a member of the Commercial Internet Exchange (CIX).
- In addition to its three connection options - Dial-up, Dial-up Plus, and Leased-line, NEARNET also provides the following turnkey services:
  - consulting services including
    - network design
    - equipment options
    - software configuration
    - Domain Name System
    - IP addressing
    - network security
  - 24 hour, 365 day network surveillance with average of 5 minute response time for monitored problems
  - training
  - hot line support
  - invitations to NEARNET technical and user seminars

Summary of NEARNET Dial-up and Leased-line Access Service Offerings

Service (Access Protocol Req'd by host system)	***Description***	***Installation***	***Annual Service Fee***	***Annual Commercial Routing*** (Optional)
Dial-up (SLIP, PPP)	14.4 Kbps Shared Port	$1,000	$2,980	$300
	14.4 Kbps Dedicated Port	$1,000	$4,300	$500
Dial-up Plus (SLIP, PPP)	14.4 Kbps Shared Port	$5950	$4,740	$300
	14.4 Kbps Dedicated Port	$5950	$6,060	$500
Leased Line (TCP/IP)	19.2 Kpbs	$ 8,450	$ 7,600	$1,000
	56 Kpbs	$ 8,450	$10,900	$2,750
	128 Kpbs	$14,950	$12,550	$3,000
	192 Kpbs	$14,950	$13,375	$3,125
	256 Kpbs	$14,950	$14,200	$3,250
	384 Kpbs	$14,950	$15,850	$3,500
	768 Kpbs	$14,950	$20,800	$4,500
	T1 (1.544 Mbps)	$14,950	$27,400	$6,500
	10 Mbps Microwave	$49,500	$44,600	$9,500

NEARNET Access Service Notes

- Dial-up services require that members be responsible for providing compatible modems which operate at V.32, V.42, and V.42bis and support speeds up to 19.200.

- Annual service fee covers delivery of turnkey, managed Internet service.

  - 24 hr network support
  - end-to-end problem resolution
  - on-site field service
  - network news feeds
  - domain name service
  - technical support
  - on-line help
  - routers and DSUs/CSUs (located on customer site) and maintenance

- Commercial routing ensures that customer's business is interconnected with all Internet destinations. This is required if customer provides a chargeable service over the Internet.

- Installation includes on-site equipment installation and management which also covers consulting for IP routing, domain name service, mail configuration, Internet tools, and other Internet-related topics.

  - Customers with Internet expertise may choose Self-Installation option in which they are responsible for installing NEARNET equipment and services in their network environment. A $3,500 discount of Standard installation is given.

  - NEARnet requires that it manage the router.

- Customer is not charge for the period of time if a network outage occurs.

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* NEARNET OVERVIEW *
****

Using field-proven data communications technology, NEARNET allows network users to:

* Exchange electronic mail with any of the millions of Internet users around the world.
* Log onto remote computers and access databases, information, and computer resources that are locally available.
* Transfer volumes of information quickly and reliably around the world.
* Keep abreast of developments in their fields participation in on-line discussion groups.

NEARNET provides its members with comprehensive information on how to take advantage of the network's services and resources, through participation in on-line documentation.

NEARNET Membership

NEARNET offers its member organizations three reliable connection options - Dial-up, Dial-up Plus, and Leased-line. Regardless of the connection option chosen, NEARNET members:

* Have access to the Internet.
* Participate in building New England's network infrastructure.
* Are invited to attend NEARNET Technical and User Seminars.
* Participate in NEARNET governance through representative committees.
* Have access to a staff of experts through the NEARNET hotline.

Network Management and Operations

NEARNET is managed by BBN Technology Services Inc., a division of Bolt Beranek and Newman Inc. of Cambridge, Massachusetts. BBN has been an international leader in networking technology since 1969. Professional staff oversee the design, installation, operation, and performance of every NEARNET node. NEARNET is monitored around the clock, 365 days a year, by experienced operators and technicians.

Network Constituents

More than five thousand organizations and ten million people access the Internet, using the powerful TCP/IP suite of networking protocols for open systems communications. Membership in NEARNET is open to any New England organization that wishes to communicate with others for the purpose of research, education, and innovation.

****
* THE NEARNET DIFFERENCE *
****

ROBUST DESIGN

NEARNET uses standard, widely available software and hardware with proven performance and reliability.

"NEARNET's reliability is not the result of a random choice of components. It is the result of a well-designed architecture. NEARNET's mesh design, coupled with very high speed links in its core, means that failures in individual devices are invisible to network users"

Scott Bradner
Consultant
Harvard University

CONSULTING

NEARNET's technical staff offer consulting in a variety of areas, including network design, equipment options, available software configuration, the Domain Name System, IP addressing, and network security.

"The technical expertise of the NEARNET staff made it possible for us to configure our hardware and connect our sites in a matter of days."

Michael Stak
Communications Manager
Meiko Scientific Corporation

TRAINING

NEARNET hosts frequent Technical and User Seminars, which include workshops and lectures given by networking experts. Previous seminars have explored network security, Internet resources, and state-of-the-art user interfaces.

"The NEARNET seminar was the best seminar I've ever been to. The manual they gave me was invaluable - I don't think that I could have mastered my job as technical liaison without it"

Mike Bennett
Systems Programmer
Suffolk University

FLEXIBILITY

NEARNET operates at speeds from 9.6Kb/s to 10Mb/s, with connection options that include dial-up, leased lines, and microwave circuits. NEARNET reaches organizations across New England through established points-of-presence in every state.

"Vertex joined NEARNET with a 9.6Kb/s dial-up connection, then six months later upgraded to a 56Kb/s dedicated line. The upgrade was flawless and required almost no effort from our staff."

Brian Perry
Systems Manager
Vertex Pharmaceuticals Incorporated

NEARNET QUALIFICATIONS

The qualifications of your Internet service provider are an important indicator of the quality of the Internet services you will receive as a client. We invite you to examine and assess our qualifications in the context of your Internet service needs.

CORPORATE STATUS

*NEARNET is owned and operated by Bolt Beranek and Newman Inc. (BBN)
*Commercial enterprise
*BBN is a $200M public corporation listed on the NYSE
*BBN was founded in 1948

CORPORATE NETWORKING EXPERIENCE

*More than 25 years designing, building and operating networks, starting with the ARPANET
*Have managed many large international networks (including the Defense Data Network, MasterCard, Barclays Bank, etc.)

ROLE IN INTERNET DEVELOPMENT

*Pioneered development of Internet Protocols
*Built first IP router
*IETF participant since its inception

INTERNETWORKING EXPERIENCE OF ENGINEERING STAFF

*BBN staff experience ranges to more than 20 years
*NEARNET staff experience averages 7 years

AVAILABILITY OF ENGINEERING STAFF

*Engineering staff always available at BBN during business hours
*Always on-call after business hours
*7 dedicated engineering staff members

SALES AND MANAGEMENT STAFF QUALIFICATIONS

*Networking experience averages 10 years
*Experienced in managing complex service businesses
*Long history of managing vendor relationships on behalf of customers

QUALITY OF NETWORK OPERATIONS STAFF

*All staff trained and experienced in latest networking technologies
*Staff focussed on customer service (for example, trouble tickets are never closed without customer approval)
*Network Operations Center (NOC) staff experience ranges to 9 years
*NOC staff experience averages 4 years
*Staff trained in trouble-shooting procedures
*Network always monitored by trained staff 13 full-time NOC staff members

NETWORK OPERATIONS COVERAGE AND CAPABILITIES

*Network operations staffed 24 hours/day, 365 days/year
*Operations center protected by uninterruptable power supply
*Established escalation procedures in place with equipment and telco vendors
*State-of-the art secure NOC facility

SERVICE RESPONSIVENESS

*Response time for monitored problems is five minutes

*Response time to calls generally within 10 minutes
*In-house field service
*Field service generally onsite within four hours

NETWORK RELIABILITY

*High (check references)
*Robust network design
*Redundant connection service available

NETWORK PERFORMANCE

*High (check references)
*High performance
*Internet connectivity
- T3 access to Internet backbone
- 10 Mb NEARNET backbone

PROBLEM OWNERSHIP

*Provide end-to-end problem solving

USER SERVICES EXPERIENCE

*First to offer user services (NSF Network Service Center)
*Have provided information services, seminars and training support since inception

COMMERCIAL ACCESSIBILITY

*Full access to Commercial Internet
*Represented on CIX Board

MANAGEMENT RESPONSIVENESS TO MEMBER NEEDS

*Members represented on influential committees:
- Management Steering Committee
- Planning Committee
- Technical Committee
- User Services Committee

REFERENCES

*Choose ANY member as reference

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* NEARNET *
* BBN TECHNOLOGY SERVICES INC.*
* 10 Moulton Street *
* Cambridge, MA 02138 *
* Telephone (617) 873-8730 *
* FAX (617) 873-5620 *
****

NEARNET Service and Support

To help you evaluate NEARNET offerings, we include the following summary of our extensive array of services. If you wish to learn more about our services, we invite you to call us at 617-873-8730. Before choosing a business partner it is helpful to check references, and choosing your Internet service partner should be no exception. We encourage you to check us out. We will put you in touch with your choice of NEARNET members (see the enclosed membership list).

STARTUP SERVICES

*Presales Consulting
*Installation Coordination
*Transport Purchase
*Equipment Purchase
*Internet Integration into Clients Network
*Domain & Network Number Registration
*Introductory Technical Training
*Introductory User Training

NETWORK OPERATIONS SUPPORT

*Around-the-clock Network Operations
*End-to-end Problem Resolution
*Problem Tracking/Trouble Ticket System
*Backbone Management
*Equipment Maintenance
*Transport Maintenance
*On-site Field Service
*Ongoing Configuration Management

TECHNICAL SUPPORT

*Ongoing Systems Integration
*Network Consulting & Configuration Support
*Network Traffic Statistics
*Network Time Protocol
*Security Services
*ESNET/DECNET Connectivity
*Internet Consulting
*Network News Feed
*Domain Name Service
*Internet Tools Training
*Security Training
*Ongoing Seminar Series
*Annual Member Seminar (Users Group)
*Commerce Business Daily
*On-line Help & Information Mailboxes
*Videotape Lending Library
*Quarterly Newsletter
*Access to Network Tools
*FTP Area for Dialup Members
*Internet Talk Radio
*MBone
*Clarinet and SCHOOLnet News
*Reliable Gopher, Archie, and Veronica Servers

ADDITIONAL BENEFITS

*Member Discount on Remote Telnet Access
*Free Advertising in the Global Network Navigator
*Full Commercial Routing

****
* NEARNET *
* BBN TECHNOLOGY SERVICES INC.*
* 10 Moulton Street *
* Cambridge, MA 02138 *
* Telephone (617) 873-8730 *

Dial-up Internet Service

Approved Hardware and Software Combinations

(Nov. 1, 1992)

NEARNET approves combinations of hardware and software that will be supported for members connecting to our Dial-up Internet service. NEARNET is not responsible for assisting with modem incompatibility problems or for help with non-approved configurations. Listed below are the combinations that are currently approved:

1. SUN + SLIPware or MorningStar SLIP + modem
2. DEC + ULTRIX + MODEM
3. DEC + VMS + TGV MULTINET TCP/IP + modem
4. PC + DOS + KA9Q + serial interface + modem
5. IBM RS/6000 + AIX + modem
6. Macintosh + Mach10 + modem

Note on Modems: NEARNET's Cambridge Dialup Server currently uses T2500 modems which operate using V.32, V.42, V.42bis at up tp 19,200 bps. NEARNET's Nashua Dialup Server currently uses Telebit T3000 modems which operate using V.32, V.32bis, V.42, V.42bis at up to 57,600 bps. Members are responsible for selecting modems which interoperate with these models.

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* NEARNET FEE SCHEDULE *
* JANUARY 1, 1994 *
****

Dial-up Services	Annual Service Fee	Annual Commercial Routing (Optional)	Installation Fee
14.4 Kb/s Shared Port	$2,980	$ 300	$1,000
14.4 Kb/s Dedicated	$4,300	$ 500	$1,000
Dial-up Plus Services			
14.4 Kb/s Shared Port	$4,740	$ 300	$5,950
14.4 Kb/s Dedicated	$6,060	$ 500	$5,950
Leased Line Services			
19.2 Kb/s -	$ 7,600	$1,000	$ 8,450
56 Kb/s	$10,900	$2,750	$ 8,450
128 Kb/s	$12,550	$3,000	$14,950
192 Kb/s	$13,375	$3,125	$14,950
256 Kb/s	$14,200	$3,250	$14,950
384 Kb/s	$15,850	$3,500	$14,950
768 Kb/s	$20,800	$4,500	$14,950
T1 (1.54 Mb/s)	$27,400	$6,500	$14,950
10 Mb/s Microwave	$44,600	$9,500	$43,500
T3	Please call for quote		
CONSULTING			
Internetwork Engineering and Consulting (4 hour minimum)		$175/hour	$1,200/day

ANNUAL SERVICE FEE

NEARNET's Annual Service Fee covers delivery of turnkey, managed Internet service to your organization. This fee includes 24 hour/day network operations, end-to-end problem resolution, on-site field service, network news feeds, domain name service, technical support, user services (on-line help, seminars, etc.), equipment (e.g. routers and DSU/CSUs), and over forty other distinct services and member benefits outlined in the NEARNET Service and Support Guide.

COMMERCIAL ROUTING OPTION

Commercial routing ensures that your business is interconnected with all Internet destinations. The commercial routing option is required if your business delivers a chargable service over the Internet.

INSTALLATION FEE

NEARNET's Standard Installation fee includes on-site equipment installation, two days of training for information and technical liaisons at our Cambridge, Massachusetts Training Center. Standard Installation also includes one day (8 hours) of consulting on such topics as IP routing, firewall design, domain name service, mail configuration, Internet tools, or another Internet-related topic of member's choice.

Members with Internet expertise may choose Self-service Installation. Members choosing Self-service Installation are responsible for installing and

integrating NEARNET equipment and services into their network environment. Self-service Installation is available at a $3,500 discount off Standard Installation.

Basic Dial-up services are listed on the fee schedule with Self-service Installation. Additional assistance and training are available on a consulting basis.

ANNUAL TRANSPORT COSTS

NEARNET purchases leased telephone lines for member organizations. Connection options and costs vary per member location. Dial-up Members pay usage charges directly to their local telephone company.

PLEASE CALL NEARNET AT (617) 873-8730 FOR AN EXACT QUOTATION FOR YOUR SITE

INTERNET PROVIDER: NETCOM ON-LINE SERVICES

INTERNET PROVIDER: NETCOM ON-LINE SERVICES

Company & Service Overview

- NETCOM is commercial direct access service which allow customers to connect their enterprise's networks to Internet-connected host systems located in 19 major metropolitan areas throughout the U.S. NETCOM also provides dial-up access services for individual users wanting access to Internet.

- NETCOM customers include:

  - large defense contractors
  - large computer manufacturers
  - insurance companies
  - chip manufacturers
  - investment companies
  - oil companies

- NETCOM customers can use NETCOM's service:

  - to connect branch offices
  - to provide local calling for telecommuting
  - establish on-demand or direct Internet connections
  - connections for News, e-mail,, and personal dial-up services

- NETCOM offers Internet connections including electronic mail, file transfer, and remote login, news feeds, source archives, communications consulting services, discounts on purchases of communications equipment, and other services.

Summary of NETCOM Direct Access Service Offerings

Access Service	*Description*	*Cost*
9600/14400 SLIP Dialup (dedicated port)	Provides client with unlimited dial-up access to any of NETCOM's local access points and direct Internet access.	$160/month
19.2KB SLIP leased line	Provides client with a dedicated digital connection to the Internet access.	$220/month
56KB leased line T1 lease line	For sites with higher transmission requirements.	$400/month $1000/month

- ❒ Connections to NETCOM can be made by any computer workstation or server with a high speed V.32/V.42bis modem and PPP or SLIP communications software. The router is located at NETCOM's site.

- ❒ Allows client to have own permanent IP address so that Internet users can transfer files to/from client site or telnet from client site.

- ❒ NETCOM provides:

  - Internet Domain registration for client's node
  - Class C IP address
  - Routing of Internet traffic to client site
  - Network news feed

Summary of Additional NETCOM Service Offerings

Access Service	***Cost***
Low volume mail with domain service (10hrs/mo)	$25/month
USENET and E-Mail Feed (uucp)	$45/month
Dialup account (shell access)	$45/month
USENET, E-Mail and Dialup (uucp + shell)	$60/month

Summary of NETCOM Personal Access Services Access Service Offerings

- For individuals wanting their own access account to Internet, both (personal) dial-up and direct (IP) connection options are available. The user is responsible for supplying the appropriate PC/workstation, modem, and communications software.

Personal Dial-up Account (shell)	Includes 24-hr access to e-mail, *USENET* news, *FTP*, *telnet*, *IRC*, UNIX and other utilities.	$19.50/month
Personal Network Connection (SLIP/PPP)	Allows user to connect individual computer workstations to Internet. and take full advantage of network information resources like gopher and *World Wide Web* in the local workstation environment.	$19.50/month plus $2/hr. usage

NETCOM On-Line Communications Services
4000 Moorpark Ave, Suite 200 San Jose, CA 95117

Thank you for asking about NETCOM. Here is a brief description of our networking services. If you need more information, please feel free to call us directly and ask for either a Business Account Representative or a Personal Account Representative. Either can be reached nationwide at 1-800-501-8649. Callers from the San Jose area or from outside the United States should call 408/554-8649.

NETCOM - The Only Connection You Need

NETCOM can be your gateway to economical communications world wide. Using local access points in major metropolitan areas throughout the United States, NETCOM offers Internet connections (including electronic mail, file transfer, and remote login), news feeds, source archives, communications consulting services, discounts on purchases of communication equipment, and other services.

NETCOM has provided high quality Internet services since 1988. Its customers include: large defense contractors, chip manufacturers, oil companies, large computer manufacturers, insurance, and investment companies. NETCOM is a communications leader in terms of low cost, reliable connectivity 24 hours each day, 7 days each week, 365 days each year.

NETCOM is committed to providing the highest possible quality service; one which will continue to expand to meet our customers needs. By using state-of-the-art communication equipment, we have been able to continually improve the quality of service delivered while maintaining low cost connectivity, all without connect time charges.

Our network is an advanced, high-speed digital network that provides connectivity from an expanding set of major cities throughout the United States. Our network can be used to connect branch offices, provide local calling for telecomputing, establish on-demand or direct Internet connections, connections for News, E-Mail, and personal dial-up services. NETCOM's network is owned, operated and maintained by NETCOM, so there are no commercial use restrictions or connect time charges. NETCOM is also a member of the Commercial Internet eXchange (CIX).

NETWORK CONNECTIONS

Connecting your enterprise's network through NETCOM allows you to have your own permanent IP address so that Internet users can, for example, transfer files to or from your site or telnet to or from your site. Connections to NETCOM can be made by any computer workstation or server with a high speed V.32/V.42bis modem and PPP (Point-to-point Protocol) or SLIP (Serial Line Internet Protocol) communications software. NETCOM

use for a flat monthly fee. While many people have access to the network at their place of employment or school, a personal account at NETCOM can provide a private and reliable home base for E-Mail, storage of source code and other personal data. All shell account users may choose from csh, tcsh, ksh, sh, bash, or a custom, menu-driven shells. With a personal account you can expect 24 hour access to E-Mail, USENET news, ftp, telnet, IRC, compilers, games, text processing tools, editors, and file transfer utilities (u/x/y/z/-modem, kermit).

NETCOM also offers an you "electronic newspaper" subscription; NETCOM serves a commercial news feed with, for example, UPI wire-service news, reports on yesterday's stock market, computer industry news, syndicated columns and features, financial information, and news on thousands of other topics. This service is available via the netnews news-readers.

Besides the monthly service fee, there is an installation fee associated with each network connection.

Dialup Account (invoiced).....$19.50/month
Dialup Account (Credit Card, Auto-Billed).....$17.50/month

PERSONAL NETWORK_CONNECTIONS

Users who want to connect individual computer workstations to the Internet can use NETCOM's Personal Network Connection service. Here, the individual computer can use the tailored network client software, like TurboGopher or Eudora, written for specific operating environments. This service allows a user to take full advantage of network information resources like gopher and World Wide Web in the local workstation environment for a small monthly fee and a low hourly charge. There is an installation fee for this service.

Personal Network Connection (SLIP/PPP).....$19.50 plus $2.00/hr

ACCOUNT REGISTRATION

There are several ways to establish your connection. To connect your network or for a News/Mail feed, please contact one of our account representatives by telephone at 408-554-8649. Your representative will be happy to discuss connection alternatives, equipment lease or purchases and network planning.

For a personal account, you can register on-line using our guest account. It will provide you with a menu driven environment in which to register, plus give you easy access to more information on our services. You can register 24 hours a day. One of our Personal Account Representatives will call you during business hours to verify our reception of your information. Once you have been contacted, you can expect that your account will be activated within 4 business hours if you have prepaid with VISA or MASTERCARD.

To access the guest account, make sure that your communication settings are 8-1-N and use VT100 for a terminal emulator. After you connect, log in as "guest". Remember, you must use lower case letters and you will not be asked for a password. You can also log in via telnet by using netcom.netcom.com or an IP address of 192.100.81.100.

ACCESS NUMBERS

Here are some of the local access numbers for 1200/2400/9600 V.32/V.42:

provides Internet Domain registration services for your node, provides you with a Class C IP address, and routes Internet traffic (e.g., electronic mail) to your site. NETCOM can also provide you with a network news feed.

PPP and SLIP are methods that are used to connect your IP network to the Internet and other Networks over a standard voice grade phone line with an inexpensive modem. The link may be established on-demand to reduce air time and eliminate the cost associated with dedicated circuits.

Besides the monthly service fee, there is an installation fee associated with each type of network connection.

9600/14400 SLIP Dialup (dedicated port).....$160.00/month
A dedicated port, SLIP dialup connection will provide your company with unlimited dialup access to any of NETCOM's local access points and direct Internet access for a low, fixed monthly fee.

19.2KB SLIP leased line.....$200.00/month
A leased line provides your company with a dedicated digital connection to the Internet access for a low, fixed monthly fee.

56KB leased line $400.00/month
T1 leased line $1000.00/month
These higher speed connections are available for sites with higher transmission requirements.

USENET - FIXED LOW COST WITH LOCAL ACCESS

USENET is a separate computer network that links many, many pairs of computers. It has many gateways into the Internet. USENET carries USENET newsgroups, an electronic forum of more than 4500 groups. In newsgroups, information is formally and informally exchanged on many subjects including: communications, computers, software bug fixes, medical research, law, biology, and social issues. You or your company can choose to receive a full or partial feed from any one of the local access points on NETCOM's UUCP network.

One of the more popular services that NETCOM provides is a combined E-Mail and netnews-feed service. Your UUCP site can establish a fast uucp link with our server for quick, reliable delivery of E-Mail and netnews. When you set up an E-Mail/netnews feed, the NETCOM staff will assist you in establishing a registered site and domain name. Once you are registered, anyone on the Internet or USENET will be able to send you mail with a simple user-name@company-name.com Internet address. Since NETCOM is a backbone site and a major Internet site, your mail will be processed and delivered promptly. There are no connect time or additional charges for this type of account, just one fixed monthly fee.

Besides the monthly service fee, there is an installation fee associated with each network connection.

Low volume mail w/ domain service (10 hrs p/mo).....$25.00/month
USENET and E-Mail Feed. (uucp).....$45.00/month
Dialup account (shell access).....$45.00/month
USENET, E-Mail and Dialup (uucp + shell).....$60.00/month

PERSONAL HOST DIALUP ACCOUNT WITH UNIX SHELL

NETCOM offers personal accounts on NETCOM's UNIX hosts with unlimited

Telephone	Metropolitan area
o 206-547-5992	Seattle, WA
o 214-753-0045	Dallas, TX
o 310-842-8835	Los Angeles, CA
o 303-758-0101	Denver, CO
o 404-303-9765	Atlanta, GA
o 408-241-9760	San Jose, CA
o 408-459-9851	Santa Cruz, CA
o 415-328-9940	Palo Alto, CA
o 415-985-5650	San Francisco, CA
o 503-626-6833	Portland, OR
o 510-426-6610	Pleasanton, CA
o 510-865-9004	Alameda, CA
o 617-237-8600	Boston, MA
o 619-234-0524	San Diego, CA
o 703-255-5951	Washington, DC
o 714-708-3800	Irvine, CA
o 818-585-3400	Pasadena, CA
o 916-965-1371	Sacramento, CA
o 510-274-2900	Walnut Creek, CA

NETCOM
Voice: (800) 501-8649 (408) 554-8649 Fax: (408) 241-9145
for a voice list of our local numbers please call: (800) 488-2558

INTERNET PROVIDER: PIPEX

Company & Services Overview

- PIPEX is a U.K.-based commercial provider of dedicated and switched access services to the Internet.
  - Customers span the spectrum of users, but primary users usually include:
    - software houses
    - banks
    - manufacturing
    - libraries
    - publishers
    - utilities
    - online service providers
- PIPEX offers two class of services
  - Dedicated Services establish the customer as a node on the Internet.
    - As a dedicated service client, a customer can resell access services to the Internet via its own machine.
  - Switched Services allow dial-up access to the Internet over the local PSTN.
  - The technical sophistication and requirements of the customer varies with the type of service the customer selects.
    - Both class of services allow for the customer to provide their own equipment and their own network management capabilities. This presumes that the customer is knowledgeable in both the hardware aspects of network access and in Internet networking.

Summary of PIPEX Dedicated Access Service Offerings

Service Features	Services				
	Worldwide & UK Leased Line Service	Worldwide Plus[1]	Worldwide Service[1,2]	UK Plus[1]	UK Service[1,2]
Exclusive use of a 64kpbs leased line from client site to PIPEX POP	●	●	●	●	●
Unlimited network traffic	●	●	●	●	●
Complete news feed over NNTP	●	●	●	●	●
Backup e-mail store and forward over SMTP	●	●	●	●	●
24 hour availability	●	●	●	●	●
24 hour support	●	●	●	●	●
Access to PIPEX international links		●	●		
Access via CIX (Commercial Internet Exchange) to all CIX members' commercial networks.		●	●		
Lease of router		●		●	
Installation Fee		£1,800	£1,800	£1,800	£1,000
Yearly Fee (Paid Quarterly in Advance)		£11,500	£9,400	£9,600	£7,500

Notes: (1) Routers are located on customer premises. (2) Customer must supply own router.

Dedicated Access Service Notes

- The Wide Area Network Management option is available for customers who require assistance in configuration of their network in preparation for connection to the Internet. PIPEX provides for:

  - IP numbering
  - Router configuration
  - Domain Name Service
  - UNIX Security
  - TCP services

Initial Configuration	£1,000
Yearly Service Fee	£1,000

- Major network configuration changes, on-site visits, and other consultant services are not included in the above.

- PIPEX guarantees 99.5% availability month by month of its backbone, transatlantic and European links.

  - Customers are not charged (that month) if this availability is not met.

Summary of PIPEX Dial-up Access Service Offerings

Service Features	Services									
	Caller Service	Caller Plus	Local Service	Local Plus	ISDN PLUS	ISDN Service	X.25 Service	GNS X.25	X.25 PLUS	PIPEX PAD
Terminal service access (via telnet) over standard phone lines	●									
Dialup IP access (via PPP or SLIP) over standard phone lines	●	●	●	●						
Dial-up IP access over ISDN network					●	●				
Routes IP traffic from customer site to Internet via 64kpbs connection between PIPEX and Mercury 5000 X.25 Network							●		●	
Routes IP traffic from customer site to Internet via 64kpbs connection between PIPEX and Tymnet X.25 Network								●	●	
PAD Protocol (X.29) provides access to/from X.25, Janus, Mercury 5000, and BT's PSS networks from/to Internet										●
Complete news feed over NNTP	●	●	●	●	●	●	●	●	●	
E-mail store and forward over SMTP	●	●	●	●	●	●	●	●	●	
24 hour availability	●	●	●	●	●	●	●	●	●	
24 hour support	●	●	●	●	●	●	●	●	●	
Access to PIPEX international links		●	●		●	●	●	●	●	
Access to CIX (Commercial Internet Exchange) and member networks.		●	●		●	●	●	●	●	
Lease of modem[2]	1	●	1	●						
Lease of dialup router[2]		●		●	●	●			●	
Exclusive ease of a fixed asynchronous circuit from client site to PIPEX POP using PPP or SLIP.[3]			●	●						
Lease of ISDN Terminal Adapters[4]					●	5				
Installation/Subscription Fee	£250	£1,500	£1,500	£1,800	£1,800	£1,000	6	6	6	-
Yearly Fee (Paid Quarterly in Advance)	£500	£4,000	£5,000	£6,000	£6,000	£1,000	7	8	9	£1,000

Note (superscript number) explanations provided on following page.

PIPEX Switched Access Service Notes

(1) Customer must provide modem.

- Modem Requirements:
  - V.32 /V.32bis capable
  - V.42
  - V.42bis

(2) Leased modem/dial-up router located at customer site.

(3) Customer is responsible for providing equipment at customer site to connect the line termination unit to their local network.

(4) Leased ISDN terminal adapters located at customer site.

(5) Customer must have ISDN suitable equipment.

(6) Customer must have dedicated synchronous connection into a public X.25 network; cost of this connection is the responsibility of the customer.

(7,8,9) Pricing based on speed of dedicated connection.

	Dedicated Line Speeds			
	< 19.2Kpbs		**48 - 64Kpbs**	
Note	Subscription/Installation Fee	Yearly Service Fee (Paid Quarterly)	Subscription/Installation Fee	Yearly Service Fee (Paid Quarterly)
7	£250	£2,000	£500	£5,000
8	£250	£3,000	£500	£7,500
9	£1,800	£7,200	£1,800	£11,600

General Note: all PSTN/ISDN line installations and charges are the responsibility of the client.

Switched Service Options

Option	Description	Option To	Fees	Notes
Morning Star PPP	Allows IP access.	All services requiring IP access.	£500/yr	PIPEX is a reseller.
Callback Option	PIPEX calls customer to establish connection to allow routing of IP traffic to customer's machine. This enables e-mail messages to be sent immediately rather than waiting for the customer to call out to PIPEX in order to collect the mail.	Caller Plus X.25 Caller Service	£1,000/yr	Customer must have direct phone number to router. If PIPEX call back charges exceeds £150/quarter, customer is billed for charges exceeding £150.
ISDN Backup Option	Provides backup over an ISDN dialup line in the event of leased line failure.	Worldwide Plus	Subscription fee: £1,500 Service fee: £2,500/yr paid quarterly	PIPEX will be responsible for installation, maintenance, and payment of the ISDN line, and costs incurred for ISDN calls during backup.
X.400 Conversion	Provides a protocol conversion facility between X.400 e-mail and other supported forms of e-mail, including SMTP and Greybook.	Dedicated (i.e. leased line services only)	Service fee: £6,400/yr paid quarterly	1000 messages/day conversion limit. Greater amounts need to negotiated with PIPEX.

Other PIPEX Services

❒ PIPEX Relay Service

- For customers who already have PIPEX service. Includes:
  - Secondary Domain Name Service
  - Act as secondary MX relay to store and forward e-mail for client site if primary MX relay is unavailable.
  - Full news feed over NNTP
- Fee: £800/year, paid quarterly. (No setup fee).

❒ PIPEX CityScape Email Service

- Access to Cambridge-based company's (Unipalm) CityScape Email. Includes:
  - Copy of Windows e-mail product
  - Installation program
  - User guide
  - E-mail store/forward account on a CityScape machine
  - Phone/e-mail support
- Fee: £400/year/machine, paid quarterly.

❒ Misc. Services

- Connections at greater than 64Kpbs
- Dial-up connections from European locations
- Ability to order connections in the UK, US and Sweden
- Anonymous FTP access to machines on the PIPEX network

Frequently Asked Questions (FAQ) v44

This article contains the answers to some Frequently Asked Questions (FAQ) about the PIPEX services. Questions marked with a + sign are new to this issue; those with significant changes since the last broadcast issue are marked by a *.

Subject: 1 What do PIPEX Worldwide and UK Leased Line Services include ?
Subject: 2 What do I get for the Worldwide PLUS service ?
Subject: 3 What do I get for the Worldwide service ?
Subject: 4 What do I get for the UK PLUS service ?
Subject: 5 What do I get for the UK service ?
Subject: 6 What do I get for the Wide Area Network Management option ?
Subject: 7 Can I resell access to the PIPEX network ?
Subject: 8 What do I get for the Caller service ?
Subject: 9 What do I get for the Caller PLUS service ?
Subject: 10 What do I get for the Callback option ?
Subject: 11 What do I get for the LOCAL service ?
Subject: 12 What do I get for the LOCAL PLUS service ?
Subject: 13 What do I get for the ISDN PLUS service ?
Subject: 14 What do I get for the ISDN service ?
Subject: 15 What do I get for the ISDN Backup Option ?
Subject: 16 What do I get for the X.25 Caller service ?
Subject: 17+ What do I get for the GNS X.25 Caller service ?
Subject: 18 What do I get for the X.25 Caller PLUS service ?
Subject: 19 What do I get for the PIPEX PAD service ?
Subject: 20 What do I get for the Relay service ?
Subject: 21 What do I get for the X.400 Conversion Option ?
Subject: 22+ What do I get for the PIPEX CityScape Email Service ?
Subject: 23+ What facilities does PIPEX have at the Cambridge POP ?
Subject: 24+ What facilities does PIPEX have at the West London POP ?
Subject: 25+ What facilities does PIPEX have at the East London POP ?
Subject: 26+ What facilities does PIPEX have at the Edinburgh POP ?
Subject: 27* What network connectivity does PIPEX have ?
Subject: 28 How is PIPEX 24-hour Hotline Support provided ?
Subject: 29 What guarantees of service do I get ?
Subject: 30* What other services are available ?
Subject: 31* What services will PIPEX provide in the future ?
Subject: 32* Can I get email via the Internet ?
Subject: 33 Can I get Usenet News via the Internet ?
Subject: 34 What sort of router is included in the cost of the UK and Worldwide PLUS services ?
Subject: 35 I have a router on my network already. Can I use it to connect to PIPEX UK and Worldwide services ?
Subject: 36 Can I connect a single computer to PIPEX, or use a computer directly connected to PIPEX as a router ?
Subject: 37 Can PIPEX be used to carry non-TCP/IP network traffic, such as for Novell PC networks ?
Subject: 38 Will connecting my network to the Internet via PIPEX pose a

security threat to my company ?
Subject: 39 What domain will I be registered in for e-mail and name service ?
Subject: 40 How do I get an IP address ?

If you have suggestions or corrections for any of these answers or any further questions, please send them directly to pipex@pipex.net; the information will be included in the next revision. To receive further copies of this FAQ as it is updated, together with other relevant information, please send a request to pipex-info-request@pipex.net, or phone PIPEX on 0223 250120, or fax PIPEX on 0223 250121.

Major changes since last version :

1 Addition of PIPEX CityScape Email Service (Subject 22)

2 New Edinburgh POP and new equipment (Subject 26)

3 New French Franchise (Subject 27)

4 Introduction of GNS X.25 Caller Service (Subject 17)

Subject: 1 What do Worldwide and UK Leased Line Services include?

Answer:

- Exclusive use of a 64kbps leased line from your site to a PIPEX Point of Presence (POP). All costs related to the leased line are included in the PIPEX charge.

- Unlimited network traffic. PIPEX imposes NO acceptable use policy on its network.

- A complete news feed over NNTP. The customer may request not to receive some or all new groups.

- A backup email store and forward service over SMTP only. Customers are expected to have a main mailhost which will send and receive SMTP mail using the DNS MX records. PIPEX can only provide a full support service if the customer's technical and administration points of contact are contactable easily via email.

- 24-hour availability. The network will be available at all times, except for scheduled maintenance periods (typically 1/2 hour per month).

- Round-the-clock support. PIPEX operates 7x24 (7 days per week/24 hours per day) Hotline Support.

- PIPEX does not normally configure customer equipment as part of the service. Configuration of customer equipment is included in the PIPEX Wide

Area Network management option.

Subject: 2 What do I get for the Worldwide PLUS service?

Answer:

- All the services mentioned in 1 above.
- Access via the PIPEX international links to international sites. Bandwidth on the international links is subject to availability.
- Access via CIX (Commercial Internet Exchange) to all the CIX members' commercial networks.
- Lease of an appropriate router, installed at your site.
- The Worldwide PLUS service costs GBP 11,500 per annum, paid quarterly in advance plus GBP 1,800 installation charge.

Subject: 3 What do I get for the Worldwide service?

Answer:

- All the services mentioned in 1 above.
- Access via the PIPEX international links to international sites. Bandwidth on the international links is subject to availability.
- Access via CIX (Commercial Internet Exchange) to all the CIX members' commercial networks.

Note: Customers will need to make their own provision for a router.

- The Worldwide service costs GBP 9,400 per annum, paid quarterly in advance plus GBP 1,000 installation charge.

Subject: 4 What do I get for the UK PLUS service?

Answer:

- All the services mentioned in 1 above.
- Lease of an appropriate router, installed at your site.
- The UK PLUS service costs GBP 9,600 per annum, paid quarterly in advance plus GBP 1,800 installation charge.

Subject: 5 What do I get for the UK service?

Answer:

- All the services mentioned in 1 above.

Note: Customers will need to make their own provision for a router.

- The UK service costs GBP 7,500 per annum, paid quarterly in advance plus GBP 1,000 installation charge.

Subject: 6 What do I get for the Wide Area Network Management option?

Answer:

The Wide Area Network Management option is aimed at customers who require assistance in configuration of their network in preparation for connection to the Internet and do not have the resources to manage all the various parts that need to work together to maintain a high quality connection to the Internet. Connection to the Internet requires consideration of (at least) the following areas:

IP numbering

- Renumbering hosts
- Numbering schemes
- Subnets
- Naming conventions

Router configuration

- IP filtering
- Routing protocols

Domain Name Service

- Primary Domain Name Server configuration
- Secondary Domain Name Server configuration
- YP/DNS interworking

UNIX security

- Logins
- Network subnetting

TCP services

- FTP (File Transfer Protocol): used for accessing files on remote hosts
- SMTP (Simple Mail Transfer Protocol): used for transfer of email between remote hosts
- NTP (Network Time Protocol): used to synchronise time on remote hosts
- NNTP (Network News Transfer Protocol): used to send news articles in real time
- As part of the Wide Area Network Management option, PIPEX will provide assistance and advice in all of the above areas, tailored to your particular network.
- PIPEX will configure your router both for the initial configuration and for any ongoing requirements. As well as obvious routing requirements, PIPEX will also configure your router to provide any required security through the use of IP filtering.
- PIPEX will if required provide the Primary Domain Name Server for your site, at a PIPEX Point of Presence (POP). PIPEX will also arrange to provide secondary Domain Name Servers.
- As well as providing the initial configuration and setup, PIPEX will change the customer's DNS configuration as and when required, on request from the customer's Technical Contact. In the case where the primary DNS is at the customer site, the customer must allow access across the network to PIPEX engineers as required to reconfigure the DNS.
- PIPEX can help administer aspects of the TCP services mentioned above, and help configure machines appropriately, or provide relevant information on how to set up the appropriate configurations. In particular, PIPEX have considerable experience of administering the above TCP services on Sun and VAX/VMS workstations, and can usually provide example configurations.
- PIPEX will provide an email store-and-forward facility as part of this service. This will be mostly used as a backup when for some reason the customer main mail host is unavailable.
- PIPEX will help with configuration of the customer mail system to ensure that it will work properly in an Internet environment.
- If required, PIPEX can release space on its anonymous ftp server for files that the customer would like others to have access to without having to administer the ftp services on a local machine.
- Any work done by PIPEX engineers will be documented, and if necessary

explained to the customer Technical Point of Contact (POC). Wherever possible, technical contact between customers and PIPEX will be carried out electronically, using the PIPEX network. Primary means of communication will be via email.

- Two days on-site consultancy. This will include assistance in all the items mentioned under IP numbering, Router configuration, Domain Name Service, UNIX security and TCP services.

- Round-the-clock support. PIPEX operates 7x24 (7 days-a-week/24-hours-a-day) Hotline Support. This service is only available as an option to customers purchasing a PIPEX leased line service.

The prices quoted below do not cover consultancy for major network configuration changes, or for on-site visits. If these are required, PIPEX will make an appropriate charge for the consultancy, depending on the nature of the work performed.

The Wide Area Network Management option costs GBP 1,000 per annum, paid quarterly in advance plus GBP 1,000 for the initial configuration and consultancy. This charge is in addition to any cost associated with the PIPEX leased line service which is a requirement of this option.

Subject: 7 Can I resell access to the PIPEX network?

Answer:

- Yes, so long as you have a leased line PIPEX service and subject to the PIPEX Reseller Terms And Conditions. Please ask pipex@pipex.net for details.

- You may not resell access to the PIPEX network unless you have a 64kbps leased line service.

Subject: 8 What do I get for the Caller service?

Answer:

- The Caller service will allow customers both terminal service access (via telnet) and dialup IP access (via PPP or SLIP) to the PIPEX network over standard PSTN (BT and Mercury) analogue phone circuits.

- The PPP and SLIP implementations used by PIPEX allow use of IP Header Compression (RFC 1144), which significantly improves response over limited bandwidth lines.

- Access via the PIPEX international links to international sites. Bandwidth on the international links is subject to availability.

- Access via CIX (Commercial Internet Exchange) to all the CIX members' commercial networks.

- An email store and forward service over SMTP only.

- A complete news feed over NNTP. The customer may request not to receive some or all new groups.

- PIPEX resell Morning Star PPP. This software works on all common unix machines and is capable of establishing and maintaining a PPP connection, suitable for a PIPEX connection. PIPEX can provide this software as part of a PIPEX connection.

Note: The customer is responsible for providing a modem at their end. This should be capable of operation using V.32 (9.6kbps) or V.32bis (14.4kbps) modulation. Error correction using V.42, and compression using V.42bis, are also highly desirable, though MNP may be used for these instead. PIPEX can provide V.32bis modems for an additional charge. The customer will be responsible for all connection charges associated with use of the phone line to PIPEX.

The Caller Service is GBP 500 per quarter, paid in advance and GBP 250 joining fee.

Morning Star PPP costs GBP 550 in addition to the PIPEX service.

Subject: 9 What do I get for the Caller PLUS service?

Answer:

- The Caller PLUS service will allow customers dialup IP access (via PPP) to the PIPEX network over standard PSTN (BT and Mercury) analogue phone circuits.

- The modems supplied with the Caller PLUS service are US Robotics V.32bis modems, giving an access speed of 14.4kbps. V.42bis compression is also supported, giving an effective speed of 19.2kbps or greater.

- The PPP and SLIP implementations used by PIPEX allow use of IP Header Compression (RFC 1144), which significantly improves response over limited bandwidth dialup lines.

- Access via the PIPEX international links to international sites. Bandwidth on the international links is subject to availability.

- Access via CIX (Commercial Internet Exchange) to all the CIX members' commercial networks.

- Lease of a modem at the customer site.

- Lease of an appropriate dialup IP router. This will normally be a Telebit NetBlazer. The NetBlazer will route any IP packets intended for other networks by initiating a dialup to the PIPEX POP and routing the packet to the PIPEX network. The NetBlazer is capable of driving the line at full speed and ensures that CPU is not taken up on a host machine on the customer network.

- The NetBlazer can also be used for PIPEX leased line services, enabling easy upgrade in the future. Customers can upgrade to the PIPEX leased line service at any time (giving PIPEX at least one month's notice in writing) for an administration cost of GBP 750 plus the difference in annual rental

between the two services.

- An email store and forward service.

- A complete news feed over NNTP. The customer may request not to receive some or all news groups. The customer will be responsible for all connection charges associated with use of the phone line to PIPEX. This is a dial-in only service. PIPEX will only make outgoing calls to the customer site for maintenance and support purposes.

The Caller PLUS Service costs GBP 4,000 per annum, paid quarterly in advance plus GBP 1,500 installation charge.

Subject: 10 What do I get for the Callback Option?

Answer:

- The Callback option is available as an option in addition to the Caller PLUS and X.25 Caller service.

- With this option, when there is incoming IP traffic destined for the customer, PIPEX will actively call the customer Router and establish a connection, allowing the IP traffic to be routed. This will enable e.g. an incoming email message to be sent immediately, rather than waiting for the customer to call out to PIPEX in order to collect the mail. In addition (if the customer IP filtering allows it) incoming ftp and telnet access is allowed.

- For Caller PLUS this option is only available where the customer has a direct phone number which will be routed straight to the PIPEX router on the customer site. An extension, or other mechanism which needs manual intervention in order to route the incoming line to the customer end router will not enable PIPEX to call out to the customer.

The Callback Option costs GBP 1000 per annum, paid quarterly in advance in addition to the Caller PLUS Service. If the cost incurred by PIPEX in calling the customer exceeds GBP 150 in each quarter, the customer will be invoiced for any amounts over GBP 150 incurred in that quarter, with a minimum invoice amount of GBP 50.

Subject: 11 What do I get for the Local service?

Answer:

- Exclusive use of a fixed circuit from your site to a PIPEX Point of Presence (POP). All costs related to the line are included in the PIPEX charge. The connection is over an asynchronous serial line using PPP or SLIP.

- For customers are who within 15km of a PIPEX Point of Presence (POP) but not on the same local phone exchange, the circuit will be an EPS-25 analogue line. Customers will be provided with modems at each end of the

circuit as part of this service.

- Where modems are supplied with the Local service, they will be V.32bis modems, giving an effective speed of 14.4kbps. In both cases, V.42bis compression is also supported, giving an effective speed of 19.2kbps or greater.

- The PPP and SLIP implementations used by PIPEX allow use of IP Header Compression (RFC 1144), which significantly improves response over limited bandwidth lines.

- Unlimited network traffic. PIPEX imposes NO acceptable use policy on its network.

- 24-hour availability. The network will be available at all times, except for scheduled maintenance periods (typically one hour per month).

- Round-the-clock support. PIPEX operates 7x24 (7 days-a-week /24-hours-a-day) Hotline Support.

- Access via the PIPEX international links to international sites. Bandwidth on the international links is subject to availability.

- Access via CIX (Commercial Internet Exchange) to all the CIX members' commercial networks.

The customer will be responsible for providing equipment at the customer end to connect the line termination unit to their local network. In most cases this will require a serial cable into a suitable computer.

The Local service costs GBP 5,000 per annum, paid quarterly in advance plus GBP 1,500 installation charge.

Subject: 12 What do I get for the Local PLUS service?

Answer:

- All the services mentioned in 11 above.

- Lease of an appropriate router. This will normally be a Telebit NetBlazer. The NetBlazer is capable of driving the line at full speed and ensures that CPU is not taken up on a host machine on their network.

- The NetBlazer can also be used for PIPEX leased line services, enabling easy upgrade in the future. Customers can upgrade to the PIPEX leased line service at any time (giving PIPEX at least one month's notice in writing) for an administration cost of GBP 750 plus the difference in annual rental between the two services.

The Local PLUS Service costs GBP 6,000 per annum, paid quarterly in advance plus GBP 1,800 installation charge.

Subject: 13 What do I get for the ISDN PLUS service ?

Answer:

- The ISDN PLUS service will allow customers dialup IP access (via PPP) to the PIPEX network over BT's ISDN phone network.

- The terminal adapters supplied with the ISDN PLUS service are Controlware CITAM units, operating in synchronous mode giving an access speed of 64kbps.

- Access via the PIPEX international links to international sites. Bandwidth on the international links is subject to availability.

- Access via CIX (Commercial Internet Exchange) to all the CIX members' commercial networks.

- Lease of an ISDN terminal adapter at the customer site.

- Lease of an appropriate dialup IP router. This will normally be a Telebit NetBlazer. The NetBlazer will route any IP packets intended for other networks by initiating an ISDN dialup to the PIPEX POP and routing the packet to the PIPEX network. The NetBlazer is capable of driving the line at full speed and ensures that CPU is not taken up on a host machine on the customer network.

- The NetBlazer can also be used for PIPEX leased line services, enabling easy upgrade in the future. Customers can upgrade to the PIPEX leased line service at any time (giving PIPEX at least one month's notice in writing) for an administration cost of GBP 750 plus the difference in annual rental between the two services.

- An email store and forward service.

- A complete news feed via NNTP. The customer may request not to receive some or all new groups.

The customer will be responsible for all connection charges associated with use of the phone line to PIPEX. This is a dial-in only service. PIPEX will only make outgoing calls to the customer site for maintenance and support purposes.

The customer is responsible for arranging the installation of the ISDN line to their site with BT. BT ISDN line costs are GBP 400 installation and GBP 336 annual rental.

The ISDN PLUS Service costs GBP 6000 per annum, paid quarterly in advance plus GBP 1800 installation charge.

Subject: 14 What do I get for the ISDN service ?

Answer:

- The ISDN service will allow customers with suitably equipped systems

dialup IP access (via PPP) to the PIPEX network over BT's ISDN phone network.

- The ISDN service supports 64kbps synchronous connections.

- Access via the PIPEX international links to international sites. Bandwidth on the international links is subject to availability.

- Access via CIX (Commercial Internet Exchange) to all the CIX members' commercial networks.

- An email store and forward service over SMTP only.

- A complete news feed over NNTP. The customer may request not to receive some or all new groups.

- The customer is responsible for arranging the installation of the ISDN line to their site with BT. BT ISDN line costs are GBP 400 installation and GBP 336 annual rental. The customer will be responsible for all connection charges associated with use of the phone line to PIPEX.

Note: The customer is responsible for ensuring that their system is capable of connecting to the ISDN service. Systems must be capable of using V.25bis dialling to initiate the connection, they must be capable of supplying suitable identification to the PIPEX POP, and using PPP over the link. Systems which have so far been identified as being suitably equipped include SMC Sparc10 and SparcLX systems with SunLink ISDN-BRI Enabling Kit, and SMC Sparcstation and Sparcserver systems with an ISDN Expansion Kit (includes SBus card and software).

The ISDN Service is GBP 1000 per quarter, paid in advance plus GBP 1000 joining fee.

Subject: 15 What do I get for the ISDN Backup Option ?

Answer:

- The ISDN Backup Option will give customers who have purchased the Worldwide PLUS service backup over an ISDN dialup line in the event of the leased line failing.

- The backup units monitor the Kilostream line. In the event of a line fault between the customer and PIPEX end, the unit initiates a connection over the ISDN. The unit monitors the Kilostream line and when it is available again, the ISDN call is cleared.

- The backup units supplied with the ISDN Backup service are Controlware IDB units, operating in synchronous mode giving a transfer speed of 64kbps.

- PIPEX will be responsible for installation, maintenance and payment of the ISDN line, and costs incurred for ISDN calls during backup are included in the cost of this service.

The ISDN Backup Option is GBP 2500 per annum, paid quarterly in advance and GBP 1500 joining fee in addition to the cost of the Worldwide PLUS Service.

Subject: 16 What do I get for the X.25 Caller service ?

Answer:

- Use of the shared 64k interconnection between PIPEX and the Mercury 5000 X.25 network , to route IP traffic between your site and the Internet via PIPEX.

- IP traffic is carried between the customer site and PIPEX over the public X.25 network using the RFC 877 standard. For routers which support it (currently only Cisco), IP header compression is supported to improve interactive response across low speed (<19.2kbps) links.

- 24-hour availability. The network will be available at all times, except for scheduled maintenance periods (typically 1/2 hour per month).

- Access via CIX (Commercial Internet Exchange) to all the CIX members' commercial networks.

- Round-the-clock support. PIPEX operates 7x24 (7 days per week/24 hours per day) Hotline Support.

- Access via the PIPEX international links to international sites. Bandwidth on the international links is subject to availability.

- An email store and forward service over SMTP only.

- A complete news feed over NNTP. The customer may request not to receive some or all news groups.

Note: Customers requiring to use this service must have a dedicated synchronous connection into a public X.25 service (Mercury 5000 or British Telecom PSS). PIPEX can arrange for an X.25 connection if you do not already have one.

All volume/duration usage charges on the X.25 network must be paid for by the customer - PIPEX will not normally call the customer unless they are prepared and able to accept reverse charge calls from PIPEX, or if they subscribe to the Callback option. Note that reverse charging is only possible where the customer is directly connected to the Mercury 5000 network.

The PIPEX X.25 Service has two cost ranges, depending on the speed at which the customer is connected into the X.25 network.

For connection at speeds of 19.2kbps or less, the X.25 Caller Service is GBP 500 per quarter, paid in advance, and GBP 250 joining fee.

For connection at speeds of 48kbps and 64kbps, the X.25 Caller Service is GBP 1250 per quarter, paid in advance, and GBP 500 joining fee.

Subject: 17 What do I get for the GNS X.25 Caller service:

Answer:

All the services mentioned in the X.25 Caller service above, except that this service uses the shared 64k interconnection between PIPEX and British Telecom's GNS X.25 Tymnet network instead of Mercury 5000.

The GNS Tymnet network extends to many countries other than the UK, so this service is particularly suited to customers outside the UK who require Internet access via the public X.25 network.

Note: Customers requiring to use this service must have a dedicated synchronous connection into a public X.25 service (for example BT's GNS Tymnet, other international carriers such as Infonet and Sprint, or the local PTT in other countries, including BT's PSS and Mercury 5000 in the UK). PIPEX can arrange for an X.25 connection if you do not already have one.

All volume/duration usage charges on the X.25 network must be paid for by the customer. PIPEX will nor normally call the customer unless they are prepared and able to accept reverse charge calls from PIPEX. Note that reverse charging is only possible where the customer is directly connected to BT's GNS network.

The PIPEX X.25 service has two cost ranges, depending on the speed at which the customer is connected into the X.25 network.

For connections at speeds of 19.2kbps or less, GNS X.25 Caller Service costs GBP 750 per quarter, paid in advance, and GBP 250 joining fee.

For connections at speeds of 48kbps and 64kbps, GNS X.25 Caller Service costs GBP 1875 per quarter, paid in advance, and GBP 500 joining fee.

Subject: 18 What do I get for the X.25 Caller PLUS service ?

Answer:

All the services mentioned in the X.25 Caller or GNS X.25 Caller services above.

- Lease of an appropriate router. This will normally be a Cisco 2000, which supports IP header compression over X.25 links to improve interactive response at low speeds.

For access speeds of 19.2kbps or less, X.25 Caller PLUS service costs GBP 1800 per quarter, paid in advance, plus GBP 1800 installation charge.

For access speeds of 48kbps and 64kbps, X.25 Caller PLUS service costs GBP 2900 per quarter, paid in advance, plus GBP 1800 installation charge.

Subject: 19 What do I get for the PIPEX PAD service ?

Answer:

- On X.25 networks, including JANET, the Mercury 5000 and BT's PSS networks, the protocol used for interactive login to a host computer across the network (the X.25 equivalent of Telnet) is known as PAD protocol (or sometimes X.29 or XXX).

PIPEX have a Protocol Translator host, a Cisco IGS router with additional software, which can convert between Internet Telnet and X.25 PAD sessions. This allows users who can log into one network to have access to hosts on the other.

Subscribers to this service can:

Log into hosts on the JANET X.25 network from Internet hosts

Log into Internet hosts from the JANET X.25 network

Log into Internet hosts from public X.25 networks

The last point is particularly useful for users that only have asynchronous dial-up access to an X.25 network - such dial-in access points are available from a local call across most of the UK (using Mercury 5000 or PSS DialPlus), and also in many countries where there is no dial-up Internet access.

Note: If you have a synchronous dedicated connection to a public X.25 network, the PIPEX X.25 Caller service is probably more appropriate. Also, this conversion service only works for interactive login - other applications, such as file transfer and electronic mail, require the X.25 Caller service, as there are no equivalent application protocols in common use on X.25 networks.

PIPEX PAD service costs GBP 250 per quarter which guarantees 10 simultaneous sessions or accounts for your organisation's use.

For existing PIPEX customers only, it is possible to set up individual accounts as well - the cost for these is GBP 25 per quarter per account.

Subject: 20 What do I get for the PIPEX Relay Service ?

Answer:

- The Relay service is for customers who already have an Internet connection, but want additional Internet services. It provides several such services.

Secondary Domain Name Service for a forward domain and an Inverse domain.

PIPEX will act as Secondary MX relay to store and forward email for the site if the Primary MX Relay is unavailable.

A full news feed over NNTP.

The Relay Service costs GBP 800 per annum, paid quarterly in advance. There is no setup fee.

Subject: 21 What do I get for the X.400 Conversion Option ?

Answer:

- The X.400 Conversion Option provides a protocol conversion facility between X.400 email and other supported forms of email, including SMTP and Greybook.

- This service is only available on top of a standard PIPEX leased line connection.

- This service is only supported over IP. The customer X.400 MTA must be able to talk to relay.pipex.net over the IP connection using X.400 over TCP/IP to RFC 1006.

- There is a limit of 1000 messages per day that will be converted . Higher counts than this are available by negotiation with PIPEX.

- Note that this facility does NOT gateway X.400 email to the external X.400 world. PIPEX are currently developing the Gateway Service which will gateway X.400 email to the X.400 world. An announcement is expected shortly.

The PIPEX X.400 Conversion Option costs GBP 1600 per annum, paid quarterly in advance. There is no setup fee.

Subject: 22 What do I get for the PIPEX CityScape Email Service ?

Answer:

PIPEX have recently launched a new Service in conjunction with CityScape, a Cambridge based company that offers email services. CityScape are offering email services based on Unipalm's Mail-It product and PIPEX's network. PIPEX will be reselling these services directly to PIPEX customers and prospects.

What you get as part of the Service :

- A copy of Unipalm's Windows Email product - Mail-It, configured for the CityScape Email Service.

- Installation program.

- User Guide tailored for CityScape Email Service.

- Email store/forward Account on an CityScape machine.

- Phone/email support from CityScape.

Customer Requirements to be able to run the CityScape Email service

- A PC able to run Windows.

- A modem compatible with Courier V.32bis/V.42bis modems used by PIPEX.

- PIPEX can provide these modems if required.

The Service in operation :

- Once set-up, the PC user will be able to run the Mail-It program by clicking an icon within the Windows Program Manager.

- Mail-It will initiate a dialup connection to the nearest available PIPEX POP, and thence over the PIPEX network to CityScape, download any email stored for the customer, and disconnect.

- When the user composes email, Mail-It will again initiate the connection and upload any outgoing email.

- The user's email address will be within a subdomain of the domain of the main company. For example, if user@company.co.uk will be a user's normal email address, mail sent to this address will be sent as normal to the user's office. If the user also has the CityScape email service, the user could also have an address user@mobile.company.co.uk. Email can be forwarded by the user to the alternate address as required.

The PIPEX CityScape Email Service costs GBP 400 per annum per machine, paid quarterly in advance at the same time as payments for other PIPEX Services.

Subject: 23 What facilities does PIPEX have at the Cambridge POP ?

Answer:

- The main PIPEX POP has 3 Cisco AGS+ routers. cam-gw1 has 24 serial ports and two Ethernet ports. cam-gw2 and cam-gw3 each have 26 serial ports and two Ethernet ports.

- Domain Name Service is provided by ns.pipex.net, a SPARCstation IPC. ns.pipex.net has 48MB memory and 3 GB disk, with a Prestoserve card which greatly improves disk IO performance. It currently also (as ftp.pipex.net) provides an anonymous ftp service for PIPEX and other Unipalm group companies, and as backup mail relay. A CDROM with over 650MB of public domain software was recently added to this archive.

- Email services are provided by relay1.pipex.net, a SPARCstation 10 runing PP, a powerful mail switch, allowing it to provide an effective email store and forward service, as well as Application Relay facilities.

- News services are provided by news.pipex.net, a SPARCstation IPC with 64MB Ram + 2GB disk. This runs a news system called INN which provides NNTP news feeds in real time to customers and peer networks. This machine is currently ninth in the list of influential sites as defined by the list published in news.lists.

- Network Management services are provided by a SPARCstation IPC (sink.pipex.net) with 2GB disk.

- All PIPEX POPS have terminal servers allowing a high degree of control over remote equipment.

- Dialup services are provided by a Telebit NetBlazer with a rack of Miracom V.32bis modems.

- Five ISDN2 circuits (ten channels in all) have been installed for use with the ISDN services.

- 64K Leased line connections are provided over a three BT KiloStream PLUS units served by a MegaStream unit linked to the BT local exchange over fibre optic cable.

- The transatlantic 256K connection to AlterNet and the 256K line to the London POP are provided via Mercury, who have installed a full Mercury connection for PIPEX. PIPEX will for some existing Mercury customers make use of Mercury for the leased line connection. The connection to Alternet has additional compressions, making the effective throughput close to 512K.

- The Cambridge POP is all within the PIPEX Comms Room, which has access via a card-swipe mechanism, preventing unauthorised access.

- An Uninterruptable Power Supply provides power to the entire Cambridge POP, protecting it from a power failure, as well as power spikes and brownouts.

- Maps of the PIPEX network are available for anonymous ftp from ftp.pipex.net:/pub/maps/Pipex-*.

Subject: 24 What facilities does PIPEX have at the West London POP?

Answer:

- The West London PIPEX POP has two Cisco AGS+ routers. Both have 26 serial ports and two Ethernet ports.

- Dialup/Local services are provided by a Telebit NetBlazer with a rack of Miracom V.32bis modems.

- The London POP is all within the Mercury Facilities Management Centre at Brentside in west London.

- An Uninterruptable Power Supply provides power to the entire London POP, protecting it from a power failure, as well as power spikes and brownouts.

- The West London POP is connected to the Cambridge POP with a 256kbps line, with a 64bps line acting as a backup in case of any problems, and a 256k line to the East London POP.

Subject: 25 What facilities does PIPEX have at the East London POP ?

Answer:

- The East London PIPEX POP was commissioned in June 1993. It is configured similarly to the West London POP with two Cisco AGS+ routers. Both have 26 serial ports and two Ethernet ports.

- Dialup/Local services are provided by a Telebit NetBlazer with a rack of Miracom V.32bis modems.

- The East London POP is all within the Telehouse Facilities Management Centre at the East India Dock.

- Five ISDN2 circuits (ten channels in all) have been installed for use with the ISDN services.

- An Uninterruptable Power Supply provides power to the entire East London POP, protecting it from a power failure, as well as power spikes and brownouts.

- The East London POP is connected to the Cambridge POP with a 256kbps line, with a 256kbps line going to the West London POP.

Subject: 26 What facilities does PIPEX have at the Edinburgh POP ?

Answer:

- The Edinburgh PIPEX POP was commissioned in November 1993. It is configured similarly to the West London POP but with one AGS+ router. It has 26 serial ports and two Ethernet ports.

- Dialup/Local services are provided by a Telebit NetBlazer with a rack of Miracom V.32bis modems.

- The Edinburgh POP is all within the Edinburgh University Computing Services Comms Room.

- An Uninterruptable Power Supply provides power to the entire Edinburgh POP, protecting it from a power failure, as well as power spikes and brownouts.

- The Edinburgh POP is connected to the Cambridge POP with a 128K line, with ISDN backup.

Subject: 27 What network connectivity does PIPEX have?

Answer:

- PIPEX has its own Domain, pipex.net, its own class B Internet number, 158.43.0.0, and its own autonomous system number, 1849.

- PIPEX has a 256K (512 after compression) connection to AlterNet in Falls Church, Virginia (near Washington DC). This provides our main connection to the Internet, and is used to receive news, email and interactive links. It is also a backup link, should any of the others fail.

- PIPEX has a 64K connection via ULCC to the European Internet Backbone, the "Ebone". This network interconnects five European capitals and IP network providers in most Western and Eastern European countries via high-bandwidth 128kbps/256kbps lines, and enhances PIPEX's European connectivity.

- PIPEX has a 64K link to JIPS (the Joint Academic Network IP service) through the JIPS backbone site at Cambridge University. This allows direct access to any JIPS and JANET-connected networks. Transit traffic (going through JIPS/JANET to other networks) is not allowed across this link.

- PIPEX has a 64K link to the EUNET through the University of Kent. This allows direct access to any EUNET subscribers.

- PIPEX has a 64K connection via the West London POP to SWIPNet, our peer network in Sweden. This allows direct connections to SWIPNet customers.

- PIPEX has a 64K connection to the BT X.25 GNS network from the East London POP.

- PIPEX has a 64K connection to the Mercury 5000 X.25 network from the West London POP.

- PIPEX has a 64K connection to the Mercury 5000 X.400 network from the West London POP.

- PIPEX has a 64K connection to OleANe in France. OleANe provide similar services to PIPEX within France, and PIPEX are a shareholder of OleANe.

- Beyond Alternet and the Ebone, there are basically two backbones to the Internet. One, the Commercial Internet Exchange (CIX), is a single point in California to which a number of commercial Internet service providers connect. As PIPEX is a member of the CIX, all PIPEX customers can freely exchange traffic with all subscribers of other CIX member networks. This includes customers of Alternet and PSInet among others in North America, also EUnet in continental Europe, and a number of service providers in Scandinavia. It is a condition of the CIX agreement that there are no restrictions on the type of traffic which can be exchanged by CIX members' subscribers across the members' networks.

- The other main backbone to the Internet is the NSFNET (note this is nothing to do with Sun's Network File System NFS !) This is a high-speed American academic and research network funded by the National Science Foundation, a US government agency. As this is funded explicitly for research and federal activities, it is not permitted to use this network for commercial purposes. It does however, form an important part of the Internet as a whole, and subscribers to CIX member networks are permitted to use it under certain conditions. Many PIPEX customers find that they have a need to communicate across the NSFNET, most commonly with academic institutions in the USA. There are also some countries where the only Internet access is via the NSFNET. If you have such a requirement, PIPEX can help with the application process for this. Unfortunately, connection applications are considered on a case-by-case basis by the NSF, so we are not able to guarantee you will be granted NSFNET connectivity. We are able to offer as much advice and help as you require, however, and the majority of applications are generally successful.

Subject: 28 How is the PIPEX 24-hour support provided?

Answer:

- At all times, PIPEX Hotline Support is the first point of contact for the customer in case of problems with the PIPEX network.

- During working hours (9am-5pm Monday-Friday excluding Bank Holidays) on-site engineers will provide our normal support service. This is backed up by 4-hour call-out support from the telecommunications suppliers and router vendors.

- Outside working hours, one of our PIPEX Support Engineers will always be on call. They will always be within close reach of an Internet connection

which can be used to help diagnose and resolve your problem, as well as the PIPEX NOC (Network Operations Centre).

- The Engineer on call always has a pager. The PIPEX network checking program is able to raise an alarm page in the event of any network failure.

Subject: 29 What guarantees of service do I get?

Answer:

- The PIPEX service contract gives details of the PIPEX service guarantee. It guarantees a 99% availability for each connection. So far, the PIPEX network has had an availability greater than 99.5%.

Ask PIPEX for a copy of the PIPEX Terms Of Service contract.

Subject: 30 What other services are available ?

Answer:

- Connections at greater than 64kbps.

- Dialup Connections from European locations.

- One-stop shop ordering for connections in the UK,US and Sweden.

- PIPEX now offer anonymous ftp access to a machine on the PIPEX network (ftp.pipex.net). This holds up-to-date information about PIPEX and access to useful network information. It will be updated and improved over time. PIPEX provide free access to 'safe areas' for PIPEX customers.

- PIPEX sell Morning Star PPP, usually for installation on a unix machine which will be the dial-up router for a PIPEX Caller PLUS service.

Please call PIPEX if you want any more information about any of the above services.

- Other services (see next item), will be announced as they become available.

Subject: 31 [P1]What services will PIPEX provide in the future?

Answer:

PIPEX will either provide directly or provide through a third party the following services :

- Archive sites.

- Public Access Unix Logins.

- TCP services of all kinds over the IP network.

- Email conversion to other protocols. PIPEX currently offer conversion between SMTP/X.400/Greybook/UUCP.

- PIPEX intend to offer NTP synchronisation at stratum 2 in the short term; we may go to level 1 in the future.

- PIPEX will be opening new POPs around the country as required by customer demand. This enables us

to site POPs in the optimum position to serve our customer base.

Subject: 32 Can I get email via the Internet?

Answer:

Yes. As soon as you are physically connected to the Internet, mail for your site is sent directly via IP to your router, which in turn routes it to the mail gateway machine on your network. PIPEX provides an email store and forward service as part of the Caller service. A backup email store and forward service is included as part of the leased line services.

If customers do not require the full PIPEX Caller Service, and only require email services, then the PIPEX CityScape Service (see above) will provide an easy to use cost-effective Service.

Subject: 33 Can I get Usenet News via the Internet?

Answer:

Yes. PIPEX will arrange for a full feed of Usenet news as available at its machines to any leased line or Caller customer who requests it. This will usually be done directly from a machine operated by PIPEX, or may be from another customer's site.

PIPEX has a comprehensive news feed, including all groups handled by uunet and with a number of other feeds covering UK and various regional newsgroups.

If you take a news feed from PIPEX, we may ask you at some time to make an onward feed available to a maximum of two other PIPEX customers. You may, if you wish, supply Usenet news to third parties. Some news originating in Europe may be covered by agreements about redistribution over which PIPEX has no control. You may have to become a party to these agreements in order to receive these articles.

There is no additional charge for taking a news feed from PIPEX via a leased line.

PIPEX will provide on request an NNTP "IHAVE" feed of whichever groups and

hierarchies are required. In order to provide this, we should like some information from you - please get the file /pub/news/news-request from ftp.pipex.net, or email to support@pipex.net requesting this. You may get active and newsgroups.Z files from ftp.pipex.net in the directory /pub/news. These will give a list of most news groups supported by Pipex (although others are forwarded).

The PIPEX news machine is currently ninth in the list of influential sites as defuned by the list published in news.lists.

A full news feed is approximately 53MB per day. alt.binaries.pictures is 20+% of this total. 53MB per day is approximately 7% of the maximum possible throughput of a 64kbps line.

PIPEX can supply a feed of the ClariNet news network. This is a system of feeding "real news" which is paid for by monthly subscription, typically $20-$50 for a 15-user site. Please make arrangements directly with ClariNet and ask for the news to be forwarded by PIPEX. For general information, start with /pub/vendor/ClariNet/README from ftp.pipex.net.

Subject: 34 What sort of router is included in the cost of the UK and Worldwide PLUS services?

Answer:

- The prices listed are for the minimum router configuration required to connect your network to the PIPEX leased line.

- The specification for the standard customer site router is at least as follows:

  o One Ethernet interface

  o One synchronous X.21 interface, capable of running at speeds of 64kbps to 2 Mbps

  o Support for HDLC or Point-to-Point Protocol ("PPP" - see RFCs 1171 and 1172) on the serial line

  o Support for RIP (Routing Information Protocol - RFC 1058) and OSPF (Open Shortest Path First - RFC 1247) routing protocols

  o Remote management via SNMP

  o IP security filtering

- Normally, you will be provided with a Cisco 2102 router, which meets the above PIPEX technical specification.

- If you require a router with additional interfaces and/or higher performance to meet your particular needs, PIPEX can help specify and supply this for you, but at additional cost to the rates quoted.

Subject: 35 I have a router on my network already. Can I use it to connect to PIPEX UK and Worldwide services?

Answer:

Yes, provided it has support for an interface and protocols compatible with PIPEX's network. For this, it must meet the router specification as in the specification above. In particular:

- It must have an X.21 synchronous interface as in the specification above. RS449 to X.21 converters are available if X.21 is not supported.

- The preferred link protocol is PPP, but other synchronous link protocols which can carry IP datagrams, such as X.25, Frame Relay, and HDLC, are also possible.

- It must be able to exchange routing information via RIP, or IGRP (Cisco's routing protocol). It is intended to phase in the new OSPF routing protocol early on, wherever possible. If your only connection to other networks is via PIPEX, PIPEX will normally use static routes over the link, and dynamic routing protocols are not required.

Subject: 36 Can I connect a single computer to PIPEX, or use a computer directly connected to PIPEX as a router?

Answer:

Whilst hardware, and free and commercial software is available to let you do this, PIPEX believes that setting it up on a host computer is harder and not much cheaper than installing a router. We recommend leasing one from us as part of our PLUS services. For accounting reasons you may prefer to purchase your own router.

Provided the software and hardware on your host computer conforms to the standard router interface and protocol requirements above, direct connection to PIPEX is certainly possible.

PIPEX are a reseller for Morning Star PPP. This software works on all common unix machines and is capable of establishing and maintaining a PPP connection, suitable for a PIPEX connection. PIPEX can provide this software as part of a PIPEX connection.

Morning Star PPP costs GBP 550 in addition to the PIPEX service.

Subject: 37 Can PIPEX be used to carry non-TCP/IP network traffic, such as for Novell PC networks?

Answer:

It is worth pointing out that you can route any protocol over the Internet, including PIPEX, by using "encapsulation": carrying that protocol's packets

inside IP datagrams.

At present our network does not support any other protocols than IP. In future, support for routing such protocols as Novell IPX, DECNet, OSI, Appletalk and XNS is certainly possible.

Subject: 38 Will connecting my network to the Internet via PIPEX pose a security threat to my company?

Answer:

Provided that adequate security measures have been taken on all your computer systems then connection to the Internet should not significantly increase security risks.

However, we understand that for many organisations, guaranteeing this level of security for all computers on their network is either impractical or insufficient.

The common way around this is to use "IP filtering" in the router which connects your network to the Internet. This allows control over which customer systems can be accessed from and to external networks. It can be set up to protect some sensitive systems, or to force all external access to your organisation through a secure "firewall" system.

The routers PIPEX can lease to you support IP filtering, and it is possible to configure access to and from your network on your router yourself (clearly you need to leave some access open to PIPEX operations staff, so they can get through to your router in case problem assistance is needed.)

If you prefer to use your own router, and it does not have IP filtering, then some security filtering can be provided for you by PIPEX, but clearly this would not be as flexible or satisfactory as controlling it yourself.

Subject: 39 What domain will I be registered in for email and name service?

Answer:

If you already have a domain registered, then that one will be used. If you do not have a domain registered, PIPEX will register one for you.

Assuming that your organisation is a commercial company within the UK, you will be registered in the ".co.uk" domain. If you are already registered in this domain, you will be able to continue using the same name.

Strictly speaking, there are three versions of the ".co.uk" domain; the Internet one which you will be registered in, the JANET one (strictly "uk.co.") and the UUCP one. The first of these is managed by the NRS (Name Registration Scheme) for the academic JANET network, and the latter two by UKNET. Registration in the NRS will also be automatically performed for you by PIPEX if you are a leased line customer. Caller service customers will have to pay the GBP 160 registration fee if they wish to be NRS-registered.

PIPEX have negotiated an interoperability agreement with UKNET, which ensures PIPEX customers can exchange mail transparently with sites in all the "uk" domains.

Note that customers will not be registered in the "pipex.net" domain. The ".net" top-level domain is intended to name things which make up part of actual networks. The only things which will appear in the "pipex.net" domain are the nodes (routers, news servers etc) which make up the infrastructure of our actual network, not customer hosts or equipment. The ".ja.net" domain is used similarly on JIPS.

Subject: 40 How do I get an IP address?

Answer:

Although it has not been very well announced to the Internet at large, there have been some significant changes to the way in which IP network numbers are assigned to organisations. This is as a consequence of the "supernetting" scheme being introduced, to make more efficient use of the rapidly exhausting IP address space. The most important change is that PIPEX, as a network service provider, has been assigned a block of Class C IP addresses, which it can re-assign to organisations requiring them. These organisations should be any existing PIPEX customers that require additional numbers, or anyone who is a new, or potential PIPEX service customer.

This should simplify, and greatly speed up, the network number allocation process, and as a consequence registration for PIPEX services. Applications for all such network numbers, Class B or C, should be directed via e-mail to: hostmaster@pipex.net .

- Class C addresses will be assigned from PIPEX's block (193.128.1-254.0) and be registered by PIPEX. Class B applications will be forwarded to the RIPE NCC (The European Internet NIChostmaster@ripe.net) who will assign and register them. PIPEX has an option on six more Class C address blocks for future use.

Note that the American NIC (nic.ddn.mil), will no longer process network number applications directly. These should normally be directed to PIPEX from now on. hostmaster@nic.ddn.mil will, however, still process other Internet number assignments (e.g. top level domains).

[FAQ v44, Last updated 8-Nov-93]

INTERNET PROVIDER: PERFORMANCE SYSTEMS INTERNATIONAL, INC. (PSI)

Company & Service Overview

- Performance Systems International (PSI) is a value added network service provider that delivers a full spectrum of internetworking support and services for users of electronic information.
  - PSINet is a national internetwork which uses TCP/IP.
  - It is the largest U.S. internetworking provider and makes up about 35% of the U.S. portion of the global Internet.
  - PSINet usage is predominantly (90%) commercial (10% educational) and is used by a broad spectrum of commercial and industrial customers and individuals.
  - Provides a contractual service guarantee which provides for 1 full day of service credit if service is interrupted for at least 4 hours.
- PSINet provides a broad spectrum dial-up and dedicated access options and support services:

Networking Services

- Personal Internetworking Services
- Dialup TCP/IP Service
- T1 TCP/IP Services
- Batch-style Service
- Frame Relay Services

Internet Support and Services

- Network and Domain Registration and Support
- Permanent IP Addressing
- USENET News Feeds
- 24hr and 7day/week support and service
- Hardware and software
- Free training and tutorials
- CIX participation
- Nationwide Access

Summary of PSINet Personal Internetworking Services

❒ *PSILink*

- Personal Internet access using free MS-DOS and Windows software from PSI.
- Provides local dialup access in over 175 North American cities and 40 European cities.
- Provides messaging to/from ATTMail, MCIMail, USENET, and BITNET.
- Access using modem supporting V.32 or V.32bis.
- Payment only by Mastercard, VISA, or American Express credit card.

	Description	One time registration fee.	1200-2400 bps:	9600 bps:	14.4 kpbs:
PSILink Lite	• Unlimited e-mail	$19	$ 9/mo.	$19/mo	$29/mo
PSILink Basic(1)	• Unlimited e-mail • Anonymous FTP • USENET News	$29	$19/mo.	$29/mo.	$39/mo
Wireless Option	• Supports wireless e-mail over RAM Mobile Data network.	$50 plus $.25/1,000 bytes.			

Note: (1) For the first 50 MB of FTP and News. $1/1MB additional charge over 50MB.

Summary of PSINet Personal Internetworking Services (cont'd)

- ***World-Dial Service***

  - Provides access to customer's corporate Internet-connected host system from local PSI site in many U.S. cities.

  - *Telnet*, *XRemote*, *tn3270*, and *rlogin* access provided through X-terminal, PC, or laptop and appropriate modem and communication software.

Service Pricing

One Time Registration Fee: $19	Prime Time Access 8:00 AM - 8:00 PM	Non-Prime Time Access Any other Time
2400 Baud	$2.75/hr	$1.25/hr
9600 Baud	$4.50/hr	$3.00/hr
14.4 Kbps	$6.50/hr.	$4.00/hr

Summary of PSINet Dialup TCP/IP Services

Service	Service Features	Pricing One-Time Registration	Pricing Monthly Service
Host-Dial	• "On-demand' Internet Access • Host access to the Internet • TCP/IP internetworking • Permanent IP address • SLIP connectivity • Local Dialups in major U.S. cities • Supports access up to 9600 baud • USENET news feed		
LAN-DIAL	• "On-demand' Internet Access • LAN access to the Internet • TCP/IP internetworking • Permanent IP address • PPP and SLIP connectivity • Local Dialups in major U.S. cities • Supports V.32, V.32bis, V.42, and V.42bis • USENET news feed	$300	$275
LAN-ISDN	• "On-demand' digital ISDN Access at 64Kpbs • ISDN PPP connectivity • Permanent IP Address • USENET news feed	$500	$400

Notes:
- Routers and modems located at customer site; maintained by PSI at customer option.
- Customer Responsibility for supplying (lease/purchase) of appropriate routers and modems.

Dedicated Data Line Products - InterFrame℠ Overview

- InterFrame℠ service uses Frame Relay technology to provide high performance, throughput, security and flexible growth path.
  - It is particularly well suited for any application which is "bursty" and requires rapid responses, such as:
    - Image and graphic transmission
    - Real-time file/record updates and transfers
    - Distributed processing
    - Database access
    - Electronic mail, especially multimedia
    - Document sharing
  - It integrates with other PSI services:
    - T1 services
    - Dialup TCP/IP services
    - PSILink services
  - It is available in three offerings
    - Standard
    - Classic
    - Basic
  - Customer's organization will need
    - A host or router that supports IP Frame Relay and is compliant with RFC 1294
    - Standard DSU/CSU
    - Equipment connected to one of PSI's POP's in one of 80 U.S. cities

InterFrame℠ Services Summary

	Interframe Standard	Interframe Classic	Interframe Basic
Features	• Bandwidths: 56, 128, 256, 384, 512, T1 • PSI-supplied customer premise equipment: Frame relay router and DSUs/CSUs at customer site, maintained by PSI • Direct SNMP access to PSINet • Domain and network number registration • Domain name service, primary and secondary • Usage statistics • Customer support • Membership to user group • Free Tutorials and Training • Service Guarantee • Emergency backup service • 24hr/7 day/week surveillance • CIX access	• Same features as *Standard* except that customer supplies own equipment.	• For experienced networking customer • Similar to *Standard* but without service guarantees, consulting, and emergency backup
Setup Fee:	Standard 56 $1,800 Basic 128,256,384,512,T1 $2,900	Classic 56 $1,000 Basic 128,256,384,512,T1 $2,400	Basic 56 $ 600 Basic 128,256,384,512,T1 $2,000
Monthly Service Fee			
56 Kpbs	$1,200	$ 800	$ 400
128 Kpbs	$1,700	$1,300	$1,000
256 Kpbs	$1,900	$1,500	$1,200
284 Kpbs	$2,100	$1,700	$1,400
512 Kpbs	$2,400	$2,000	$1,700
T1	$3,400	$3,000	$2,700

Options:

USENET access using NNTP:	$ 95/mo
Unlimited Individual dial-up service:	$700/mo
Security Filter:	$400/mo
Security Encryption:	$400/mo

Dedicated Data Line Services Summary

Service	Service Features	Notes	
CCS (Customer Connection Service) (TCP/IP access)	Internet Access using customer's routers and communication equipment. Customer responsible for configuration and security. • Internet Access • Secure Interconnect - POPS • CIX Access • 19.2 Kpbs to T1 Service • TCP/IP Internetworking • Free Local Dialups • Unlimited consulting • Emergency backup service • Service Guarantee • National Availability • Flat Fee • Free USENET/News feed • User Groups	19.2 Kpbs 56 Kpbs 1.5 Mpbs	$10,500 + line cost $19,500 + line cost $49,000 + line cost
SCS (Standard Connection Service) (TCP/IP access)	Same as CCS but includes: • 19.2 to 3.0 Mbps service • All equipment provided, maintained and configured by PSI; required routers and DSU/CSUs located at customer site. • Security Option (10% surcharge to provide secure ids)	19.2 Kpbs 56 Kpbs 500 Kpbs 1.5 Mpbs 3.0 Mpbs	$12,500 + line cost $27,500 + line cost $45,000 +line cost $65,000 + line cost $85,000 + line cost

PSINet Batch-Style Services Summary

Service	Service Description & Features	Pricing		
			Registration	Monthly Fee
UUPSI	Electronic Mail and Bulletin Board using UUCP protocol, PC, and modem. Features: • Customer Support Group • Local dialups • Modem and software available from PSI • 24 hr./ 7 day/week operations • Domain name • PSINet participation • CIX participation • ClariNet Info Service (for additional fee to ClariNet)	UUPSI Basic Service (e-mail)	$150	$50
		USENET Option	$150	$100
UUFTP	Supports anonymous file transfer.	Fee ($1/MB)	$ 75	$25 minimum charge

The Connectivity Leader:

Better Choices for Internetworking Services

Dedicated Data Line Products:

InterFrame℠

- *Standard*
- *Classic*
- *Basic*

InterFrame℠ uses Frame Relay technology and provides the latest advantages in performance, security, throughput and future applications, along with the proven value of internetworking.

InterFrame is available in three styles: "Standard", "Classic" and "Basic", with options that can be added including national, low speed dialups for terminal devices and USENET/News via NNTP. Each service offers a variety of bandwidths (56, 128, 256, 384 and 512 Kbps to T1) and PVC configuration options for optimal intra- and inter-organizational business usage.

Some of the features of "Standard" service include:

- PSI-supplied customer premise equipment
- Customer Support Group available via phone and e-mail
- Membership in a seven-year old user's group
- Free tutorials and training
- Service guarantees
- Emergency Backup Service during any outage
- 24 Hr./7 Day Network Operations Center
- Commercial Internet Exchange (CIX) access
- Optional Security Filtering and Encryption available

InterFrame "Classic" service includes many of the same features as the "Standard" service, however, the customer provides and maintains their own host or router and DSU/CSU.

InterFrame "Basic" service is for the experienced internetworking customer and assures reliability without the common need for consulting, emergency backups and service guarantees.

SCS℠

Standard Connection Service (SCS℠) 19.2 Kbps, 56 Kbps, 500 Kbps and T1 (1.5 Mb), 3.0 Mb: Turnkey LAN integration using TCP/IP and dedicated circuits, PSI provided, configured and maintained customer premise equipment, documentation and customer support such as establishing news feeds, e-mail integration and Domain Name Servers.

CCS℠

Customer Connection Service (CCS℠) 19.2 Kbps, 56 Kbps, and T1: Reliable dedicated dataline LAN-to-WAN integration with documentation and substantial customer support while still using customer-owned, configured and maintained equipment at their premises.

Dialup TCP/IP Products:

HOST DIAL℠

HOST-DIAL Connection Service (HOST-DIAL℠): TCP/IP packet access on a dialup basis from a host computer to PSINet® and the Internet via SLIP, using a PC and modem at up to 9600 baud.

LAN DIAL℠

LAN-DIAL Connection Service (LAN-DIAL℠): TCP/IP packet access on a dialup basis from a LAN to PSINet and the Internet via SLIP or PPP; true LAN to WAN integration through a dialup line and modem at up to 9600 baud.

LAN-ISDN℠

LAN-ISDN Service (LAN-ISDN℠): Like LAN-DIAL, it provides TCP/IP packet access on a dialup or "switched" basis from a LAN to PSINet and the Internet via PPP. It uses one "B" channel of the customer's ISDN line (or BRI) for LAN integration access at up to 64Kbps.

Personal Internetworking:

PSILink℠

PSILink℠: Personal Internet access using simple, free MS-DOS and Windows software from PSI for the PC. Unlimited e-mail support is standard with V.32 (9600 baud) modem access. In addition, V.32bis (14,400 baud) access is available with the PSILink for Windows application. USENET News, Anonymous FTP and paging/radio packet network integration for wireless messaging is also available.

WORLD-DIAL℠

WORLD-DIAL Service℠: An inexpensive usage-based service that provides *Telnet, XRemote, tn3270* and *rlogin* access to the PSINet and Internet host computers at 2400 baud (V.22bis), 9600 baud (V.32) or 14,400 baud (V.32bis) 24 hours/day via local dialups in many U.S. cities.

Batch-Style Services:

UUCP UUPSI℠

UUPSI℠ Mail/News: Electronic Mail and Bulletin Board services using the common UUCP protocol, a PC and a modem.

UUFTP

UUFTP is an additional service option of UUPSI and supports anonymous file transfer capability from the Internet using the UUCP protocol.

The Company: PSI

Performance Systems International, Inc. (PSI) is a value added network service provider that delivers a full spectrum of products for the user of electronic information with over 5,000 customers and hundreds of thousands of users. The PSI staff is a team of experienced networking professionals. They are proven leaders in offering the means for professional organizations and individuals to access and process information and communicate with other professionals in product development and support, news, financial services, government contracting, consulting and academic pursuits.

Incorporated in 1989, PSI is headquartered in Herndon, Virginia with its primary Network Operations Center (NOC) and Customer Support Group (CSG) near Albany, New York.

PSINet and the Internet

PSINet is a reliable, high performance public data internetwork (PDI). Its combination of hardware, software and communications facilities represents a substantial deployment of components integrated, fielded and managed to offer unparalleled networking services.

PSINet uses common networking languages (such as TCP/IP), supporting both batch style and interactive network services, including electronic mail, USENET news, remote terminal access, file transfer, bulletin board and directory services. It is about 35% of the U.S. portion of the global Internet. This collection of networks called the Internet represents:

- About two-thirds Commercial and one-third Research and Education Networks
- Over 25,000 Organizations
- Over 3 Million Daily Users
- The U.S. and Over 80 Other Countries
- Over 30 Million E-mail Users

While over 90% of PSINet's traffic remains within its network, the outbound traffic is divided evenly between the commercial and research & education portions of the Internet.

The Commercial Internet Exchange (CIX)

The CIX represents direct interconnection of commercial public data internetworks (PDIs). Customers of these PDIs can avoid federally-subsidized networks with restrictive usage policies, so that the commercial portion of the Internet (about two-thirds) represents commercial service providers connected directly to each other, creating a unique backbone.

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The PSI Difference

- Nation's Largest Commercial IP Internetworking Service Provider with a Decade of Experience and over 5,000 Customers.
- Unique network security options for enterprise and joint development internetworking.
- Continuing Leader in Commercialization, Key Technologies, Reliability and Service Spectrum.
- National Scale of Internetworking Service with Coast-to-Coast Solutions.
- Frame and Cell Relay Switched backbone for Unmatched Performance and Flexibility.
- Turnkey/Reliable Network Provider with Service Guarantees and Service Adjustments.
- Internetworking Consulting, Documentation and Tutorials.
- 24-Hour, 7-Days/Week Operations and Field Service.
- Distributed Fault-Tolerant Design.
- Present in Over 80 Cities Across the U.S.
- Telephone Company Co-Located Core Node WAN Architecture for security, privacy, reliability and economy.
- Customer Network Number and Domain Name Registrations. Network Integration and Domain Name System (DNS) Support (primary, secondary, both) available with most services.
- Access to/Knowledge of Software Systems to Facilitate Services.
- Seven-Year Old User Group.
- Commercial Internet eXchange (CIX) Co-Founder and Participant.
- Network Applications Development Staff.

For further information, please contact:

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	all-info@psi.com (auto directory response)	

Cable That Ties PCs to Internet To Be Unveiled

By Jared Sandberg
Staff Reporter of The Wall Street Journal

NEW YORK — **Continental Cablevision Inc.** and **Performance Systems International Inc.** today are expected to introduce the first cable service to link home computers to the Internet.

But that connection to the global computer network will carry a steep price.

Cable subscribers will have to pay a hefty $125 a month to enjoy the speedy link-up and snazzy graphics that the new Continental offering will provide. "At that price, it isn't a mass-market" service, says Daniel Dern, author of "The Internet New User's Guide." "Fifteen hundred bucks a year — that's the price of car insurance!"

Nor will the new cable link be available on a massive scale anytime soon. Continental Cablevision, the nation's third-largest cable operator, is starting the Internet offering in Cambridge, Mass., where it serves 20,000 homes. It will expand it to other Boston suburbs later this year and hopes ultimately to make Internet access available to all of its 2.9 million cable homes in New England, the Midwest, California, and Florida.

But only one million homes in Continental's systems have home computers capable of tapping Internet services, the company says. Nationwide, some 32 million households have PCs, while 60 million homes get cable.

Other cable companies, such as **Jones Intercable Co.**, are testing high-speed access to the Internet. And on-line services such as **Prodigy Services Co.** and **H&R Block Co.**'s CompuServe Information Services are working on cable delivery of their services.

Continental cable subscribers will be able to attach their personal computers to special modem boxes linked to the household cable line. Cable "broad band" allows for far faster transfer of large amounts of data than the phone-line access most Internet users must endure. Such higher capacity will allow homes with cable access to portions of the Internet that utilize memory-hogging video and sound, such as radio programs from Voice of America and electronic mail with a person's picture and voice.

"It would be like adding a CD-ROM to your computer. Now you've got networked multimedia" says Martin Schoffstall, chief technical officer of Performance Systems International, a Herndon, Va., provider of Internet access. Over time, Continental and Performance Systems International say the price of access is likely to come down.

Internet users, who search databases, take part in electronic bulletin boards and access remote computers world-wide, are often restricted to viewing the network in text format because phone lines often transmit at only 2,400 bits per second. Continental and Performance Systems International are offering access at speeds more than 200 times faster.

Even if cable subscribers could pay cheaper rates for Internet access, some observers doubt the service will catch on because the network is so difficult to navigate. And businesses, which make more use of the Internet than TV viewers, will have to pay even more dearly for the new linkup — $2,000 to $2,750 a month, depending on the speed of access.

▲ PSI Functionality

- ▲ Electronic Mail
- ▲ USENET/News
- ▲ Internet Anonymous *ftp*
- ▲ 1200-9600 bps (V.32) Dialup for DOS, HP 95LX, HP 100LX and Windows; V.32bis Available for Windows
- ▲ U.S. Wireless Access Through *RAM Mobile Data*
- ▲ Worldwide Dialup Access

▲ Dialup Locations

PSILink is available in most metropolitan cities throughout the U.S., as well as cities throughout North America, Europe and the Pacific Rim. Below is a partial list.

North America

Atlanta	New York
Boston	Oklahoma City
Calgary	Philadelphia
Chicago	Reno
Denver	San Francisco
Los Angeles	Tampa
Minneapolis	Washington

Europe

Amsterdam	Helsinki
Barcelona	London
Brussels	Milan
Copenhagen	Oslo
Dublin	Paris
Frankfort	Stockholm
Geneva	Vienna

Pacific Rim

Hong Kong	Sydney
Singapore	Tokyo

▲ Pricing

Service Fees

	1200 - 2400 bps	*9600 bps (V.32)*	*14400 bps (V.32bis)*
PSILink Lite	$ 9/Mo.	$ 19/Mo.	$ 29/Mo.
PSILink Basic	$ 19/Mo.	$ 29/Mo.	$ 39/Mo.

Class A Dialup Fees - None

Class A dialups are available in over 55 cities throughout the U.S. No connection time charges are incurred for the use of Class A dialup numbers. The use of these numbers are included in the monthly service fees above.

Class B Dialup Fees - Low

Class B dialups are available in many cities throughout North America, Europe and the Pacific Rim. In addition to the monthly service fee, Class B North American dialups incur an additional $6 per hour during prime time and $2.50 per hour during non-prime time. Class B Rest of World dialups incur an additional $18 per hour.

USENET/News and FTP Fees

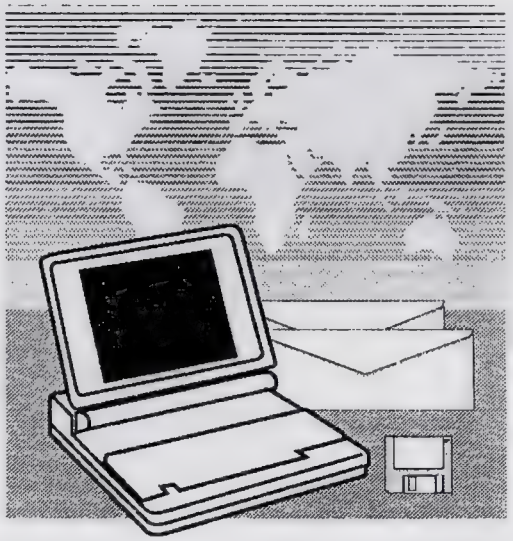
The first 50 megabytes of FTP and News each per month are included in the monthly fee for PSILink Basic service. Additional megabytes over 50 of FTP and News cost $1 per megabyte each.

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PSILink℠

GLOBAL MESSAGING ACCESS



PSILINK SUPPORTS DOS, MICROSOFT WINDOWS, HP 95LX and HP 100LX PALMTOPS

PSILink℠

GLOBAL MESSAGING ACCESS

▲ PSILink: A Global Solution

Whether you are at home, at work, in a hotel room or in your car, network access is there with PSILink.

With local dialup access in over 175 cities in North America and 40 throughout Europe and the Pacific Rim, PSILink is a global solution.

PSILink provides unlimited electronic messaging to the Internet, as well as ATTMail®, MCIMail®, USENET, BITNET, and all other connected networks in the global messaging matrix.

▲ More than Messaging

PSILink supports USENET/News (the largest distributed bulletin board service, or BBS, in the world) and anonymous *ftp* (the Internet standard for file transfer).

▲ PSILink Supports Two-Way Wireless Communications

Unique among all electronic mail packages, PSILink supports two-way wireless communications. Using packet radio networks, like RAM Mobile Data's in the U.S., and a radio modem, like Ericsson GE's *Mobidem*, you can send and receive e-mail in your car then dialup with a standard modem in your home, office or hotel room. You have a choice. And, with our globe-straddling dialups, your phone call is probably local in most major cities.



▲ Two Flavors

PSILink is available in two flavors: *Lite*, and *Basic*. *Lite* provides unlimited messaging as well as the ability to use paging mailboxes seamlessly.

Basic provides the ability to do unlimited messaging as well as anonymous *ftp* and USENET/News.

PSILink supports 1200-2400 baud modems, as well as 9600 baud (V.32) modems. PSILink for Windows also supports 14,400 baud (V.32bis).

▲ The Software

DOS

PSILink 3.6 runs under any standard MSDOS machine that has 512K of available memory. Small machines with 8088's, like the original IBM PC and Poqet™ palmtops, all run PSILink successfully.

The software is easy to install. Like most other MSDOS applications, simply type *INSTALL* at the *A:>* prompt and answer the questions. With on-line context-sensitive help available within the application, using PSILink is a snap.

HP 95LX and HP 100LX

The PSILink *Lite* service is now supported on the leading palmtop computers - both wireless and dialup.

You can receive a continuous stream of alphanumeric pages while you drive in your car or sit in a meeting. However, unlike the competition, you can ***respond.***

Microsoft Windows

PSILink service also supports Microsoft Windows version 3.1. Both PSILink *Lite* and *Basic* service are available. PSILink for Windows supports 1200-2400 baud, 9600 baud (V.32) and 14,400 baud (V.32bis) modems.



Macintosh

There is a Macintosh platform of PSILink called *WorldLink* available from InterCon Systems Corporation. For further information, contact InterCon at 1.800.INTRCON or +1 703.709.5500.

▲ Distribution

PSILink software is distributed by the following methods only:

- 3.5 inch 1.44 Megabyte DOS diskette
- Via anonymous file transfer on the PSINet® archive host, *ftp.psi.com*, in the *psilink* directory
- Via the new PSILink Bulletin Board System at no charge for downloading. The telephone number to access the bulletin board from any standard communications software package – such as Kermit, ProComm or CrossTalk – is 703.904.4272. The login is *"psilink"* and no password is necessary.

PSILink Platform	E-Mail	USENET ftp	1200 - 2400bps	9600bps (V.32)	V.32bis	Wireless
DOS	▲	▲	▲	▲		▲
HP 95LX HP 100LX	▲		▲			▲
Windows	▲	▲	▲	▲	▲	★

▲ - Available Today
★ - Available in the Future

PSILink Service Matrix

PSILink SM DIALUP CITIES

CLASS A U.S. CITIES

Akron, OH
Ann Arbor, MI
Albany, NY
Atlanta, GA
Austin, TX
Baltimore, MD
Binghamton, NY
Boise, ID
Boston, MA
Buffalo, NY
Chicago, IL
Cincinnati, OH
Corning, NY
Columbus, OH
Dallas, TX
Dayton, OH
Denver, CO
Detroit, MI
Dublin, OH
Eugene, OR
Fredericksburg, VA
Garden City, NY
Harrisburg, PA
Hartford, CT
Herndon, VA
Houston, TX
Islip, NY
Ithaca, NY
Jacksonville, FL
Los Angeles, CA
Manchester, NH
Miami, FL
Newark, NJ
New Haven, CT
New York, NY
Norfolk, VA
Olympia, WA
Orlando, FL
Philadelphia, PA
Phoenix, AZ
Pittsburgh, PA
Portland, ME
Portland, OR
Potsdam, NY
Poughkeepsie, NY
Princeton, NJ
Providence, RI
Richmond, VA
Rochester, NY
Sacramento, CA
Salem, OR
San Francisco, CA
Santa Clara, CA
Seattle, WA
Spokane, WA
Stamford, CT
Sunnyvale, CA
Syracuse, NY
Tampa, FL
Trenton, NJ
Tri Cities, WA
Utica, NY
Washington, DC
Westford, MA
White Plains, NY
Yakima, WA
Youngstown, OH

CLASS B U.S. CITIES

Akron, OH
Albany, NY
Albuquerque, NM
Alhambra, CA
Amarillo, TX
Anniston, AL
Atlanta, GA
Austin, TX
Baltimore, MD
Bangor, ME
Baton Rouge, LA
Birmingham, AL
Boonton, NJ
Boise, ID
Boston, MA
Boulder City, NV
Buffalo, NY
Burbank, CA
Charleston, WV
Charlotte, NC
Cherry Hill, NJ
Cheyenne, WY
Chicago, IL
Cincinnati, OH
Cleveland, OH
Colton, CA
Columbia, SC
Columbus, GA
Columbus, OH
Corona, CA
Dallas, TX
Denver, CO
Des Moines, IA
Detroit, MI
El Monte, CA
El Paso, TX
Fayetteville, NC
Fort Lauderdale, FL
Fort Worth, TX
Fresno, CA
Garden Grove, CA
Grand Rapids, MI
Greensboro, NC
Hackensack, NJ
Harrisburg, PA
Hartford, CT
High Point, NC
Honolulu, HI
Houston, TX
Indianapolis, IN
Jackson, MS
Jacksonville, FL
Kansas City, MO
Killeen, TX
Las Vegas, NV
Lawton, OK
Little Rock, AR
Long Island, NY
Los Angeles, CA
Louisville, KY
Madison, WI
Memphis, TN
Miami, FL
Milford, CT
Milwaukee, WI
Minneapolis, MN
Monterey, CA
Moorestown, NJ
Mountain View, CA
Nashville, TN
Newark, NJ
New Brunswick, NJ

FOR ADDITIONAL INFORMATION, CONTACT:

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Continued on reverse side

CLASS B U.S. CITIES (Continued)

New Orleans, LA
Newport Beach, CA
Newport News, VA
New York, NY
Norfolk, VA
North Hollywood, CA
Oak Brook, IL
Ogden, UT
Oklahoma City, OK
Omaha, NE
Oxnard, CA
Parsippany, NJ
Pennsauken, NJ
Pensacola, FL
Philadelphia, PA
Phoenix, AZ
Pittsburgh, PA
Plymouth, MI
Port Hueneme, CA
Portland, ME
Portland, OR
Poughkeepsie, NY
Providence, RI
Raleigh, NC
Redwood City, CA
Reno, NV
Rialto, CA
Richmond, VA
Sacramento, CA
St. Louis, MO
Salem, OR
Salinas, CA
Salt Lake, UT
San Antonio, TX
San Bernardino, CA
San Diego, CA
San Francisco, CA
San Juan, PR
San Jose, CA
Santa Barbara, CA
Santa Fe, NM
Santa Rosa, CA
Schenectady, NY
Seattle, WA
Shreveport, LA
Sioux Falls, SD
Spokane, WA
Springfield, IL
Springfield, MA
Springfield, NJ
Stamford, CT
Summit, NJ
Tacoma, WA
Tampa, FL
Terre Haute, IN
Trenton, NJ
Tucson, AZ
Tulsa, OK
Van Nuys, CA
Washington, DC
West Palm Beach, FL
Whippany, NJ
White Plains, NY
Wichita, KS
Wilmington, DE
Worcester, MA

CLASS B INTERNATIONAL CITIES

CANADA
Calgary
Montreal
Ottawa
Toronto
Vancouver

MEXICO
Cancun
Guadalajara
Monterrey

AUSTRALIA
Brisbane
Melbourne
Sydney

AUSTRIA
Vienna

BELGIUM
Brussels

BRAZIL
Sao Paulo

DENMARK
Copenhagen

FINLAND
Helsinki

FRANCE
Paris

GERMANY
Frankfurt

HONG KONG
Hong Kong

IRELAND
Dublin

ITALY
Milan

JAPAN
Osaka
Tokyo

LUXEMBOURG
Luxembourg

NETHERLANDS
Amsterdam

NORWAY
Oslo

PHILIPPINES
Manila

PORTUGAL
Lisbon

PUERTO RICO
San Juan

SINGAPORE
Singapore

SOUTH AFRICA
Cape Town
Durban
Johannesburg

SPAIN
Barcelona
Madrid

SWEDEN
Stockholm

SWITZERLAND
Bern
Geneva

UNITED KINGDOM
London

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PSILink SM WIRELESS CITIES

WIRELESS COVERAGE - U.S.

Albany, NY
Albuquerque, NM
Allentown, PA
Atlanta, GA
Atlantic City, NJ
Augusta, GA
Austin, TX
Bakersfield, CA
Baltimore, MD
Baton Rouge, LA
Beaumont, TX
Birmingham, AL
Boston, MA
Buffalo, NY
Canton, OH
Charleston, SC
Charlotte, NC
Chattanooga, TN
Chicago, IL
Cincinnati, OH
Cleveland, OH
Colorado Springs, CO
Columbia, SC
Columbus, OH
Corpus Christi, TX
Dallas, TX
Davenport, IA
Dayton, OH
Denver, CO
Des Moines, IA
Detroit, MI
El Paso, TX
Flint, MI
Fresno, CA
Ft. Worth, TX
Grand Rapids, MI
Greensboro, NC
Greenville, SC
Harrisburg, PA
Hartford, CT
Houston, TX
Indianapolis, IN
Jackson, MS
Jacksonville, FL
Johnson City, TN
Kansas City, MO
Knoxville, TN
Lakeland, FL
Lancaster, PA
Lansing, MI
Las Vegas, NV
Little Rock, AR
Louisville, KY
Los Angeles, CA
Melbourne, FL
Memphis, TN
Miami, FL
Milwaukee, WI
Minneapolis, MN
Mobile, AL
Nashua-Manchester, NH
Nashville, TN
New Bedford, MA
New Haven, CT
New Orleans, LA
New York, NY
Norfolk, VA
Oklahoma City, OK
Omaha, NE
Orlando, FL
Philadelphia, PA
Phoenix, AZ
Pittsburgh, PA
Portland, OR
Poughkeepsie, NY
Providence, RI
Raleigh,NC
Richmond, VA
Rochester, NY
Sacramento, CA
Saginaw, MI
Salt Lake City, UT
San Antonio, TX
San Diego, CA
San Francisco, CA
Santa Barbara, CA
Scranton, PA
Seattle, WA
Shreveport, LA
Spokane, WA
Springfield, MA
St. Louis, MO
Stockton, CA
Syracuse, NY
Tampa, FL
Toledo, OH
Tucson, AZ
Tulsa, OK
Washington, DC
West Palm Beach, FL
Wichita, KS
Worcester, MA
York, PA
Youngstown, OH

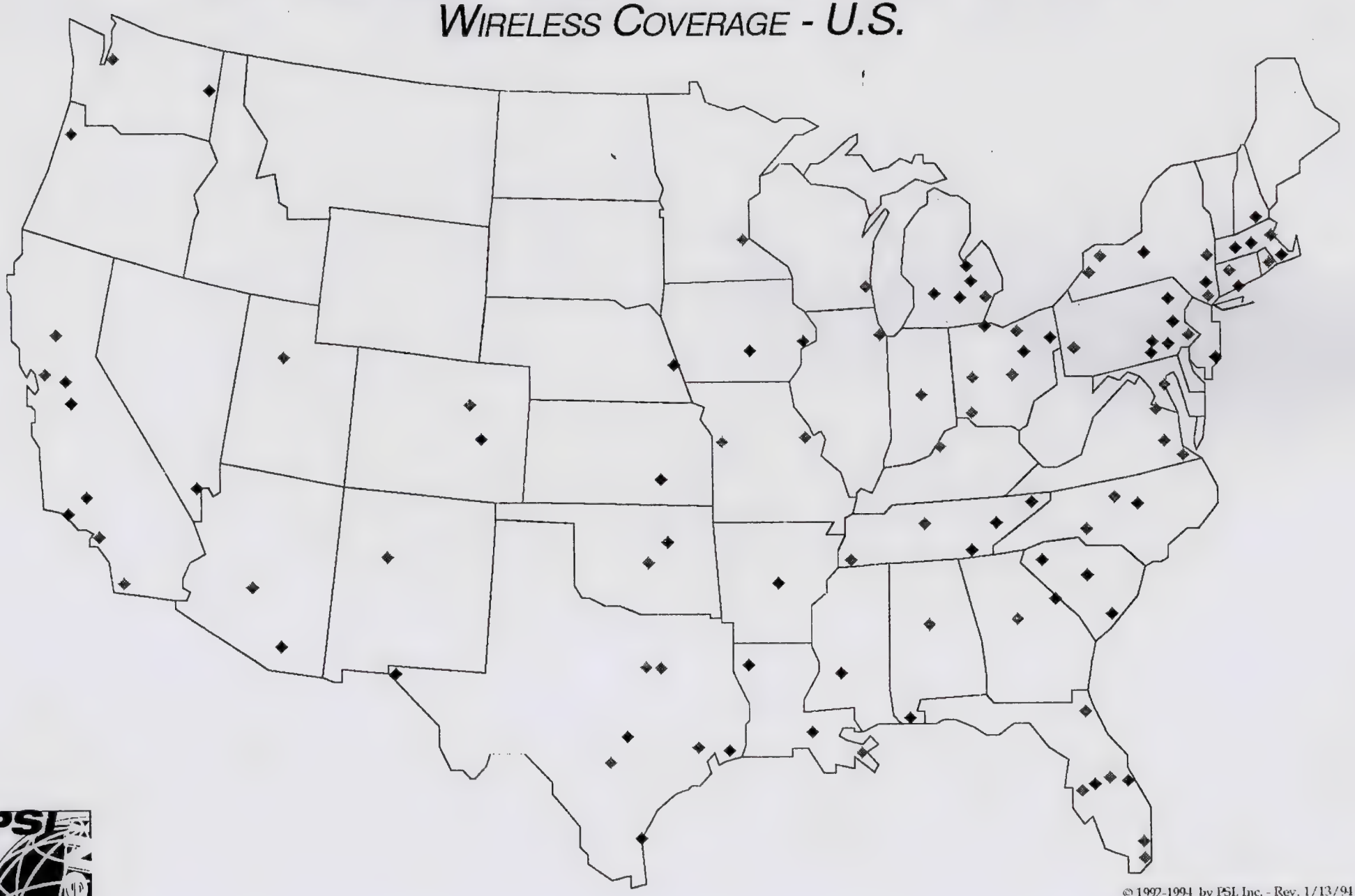
FOR ADDITIONAL INFORMATION, CONTACT:

Performance Systems International, Inc.
510 Huntmar Park Drive
Herndon, VA 22070
Voice: +1.703.709.0300
FAXBACK INFO: 1.800.FAX.PSI1
E-Mail: *psilink-info@psi.com*

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PSILink SM Wireless Cities

Wireless Coverage - U.S.



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PSILink℠ Frequently Asked Questions

GLOBAL MESSAGING ACCESS

Answers to commonly asked PSILink User questions

Q: What applications can I do with PSILink℠?

A: PSILink is available in two flavors - Lite, which provides unlimited messaging; and Basic, which provides unlimited messaging as well as anonymous FTP and USENET/News.

Q: How much does the PSILink service cost?

A:
- *PSILink Lite, 1200-2400 bps is $19 One-time Registration fee +$9/Month (DOS, Windows, HP 95/100 LX)*
- *PSILink Lite, 9600 bps is $19 One-time Registration fee +$19/Month (DOS, Windows)*
- *PSILink Lite, 14.4 kbps is $19 One-time Registration fee + $29/Month (Windows only)*
- *PSILink Basic, 1200-2400 bps is $19 One-time Registration fee +$19/Month (DOS, Windows)*
- *PSILink Basic, 9600 bps is $19 One-time Registration fee +$29/Month (DOS, Windows)*
- *PSILink Basic, 14.4 kbps is $19 One-time Registration fee + $39/Month (Windows only)*
- *The PSILink wireless option is available at an additional $50 One-time registration fee, plus $.25 per 1,000 bytes.*

Q: What is the baud rate and dial up fees of the different Classes of numbers?

A: Class A Low Speed-2400 bps - No Charge
Class A High Speed-9600 - No Charge
Class A Very-High Speed-14.4 kbps - No Charge
Class B North America-2400 bps - $6/Hr. Prime Time: $2.50/ Hr. Non-Prime Time
Class B Rest of World-2400 bps - $18/Hr.

The first 50 megabytes of FTP and News each per month are included in the monthly fee for PSILink Basic service. Additional megabytes over 50 of FTP and News cost $1 per megabyte each.

Q: Can I have a temporary PSILink account to try it out?

A: No.

Q: How do I pay for PSILink?

A: With your Mastercard, VISA, Discover, or American Express credit card.

Q: Is credit card billing the only way to pay?

A: Yes, with the exception of bulk orders of 25 accounts or more which can be purchased with a purchase order.

Q: Can I sign up over the phone?

A: No.

Q: How long will it take for me to get my account information after I send it in to PSI?

A: Depending on the type of service ordered, this information is normally sent out within 7-10 business days.

Q: Can I get PSILink any faster than by U.S. Mail? How much do I have to pay for faster delivery?

A: Once your PSILink application has been approved, (this generally takes a minimum of 2 days) overnight delivery is available, provided we receive a written authorization to apply the $10.50 delivery fee to your credit card, or provide PSI, Inc. with your Federal Express account number.

Q: Is there a MAC version? How do I sign up? What are the costs?

A: Yes, there is a MAC version called WorldLink, available from Intercon Systems, 950 Herndon Parkway, Herndon, VA 22070.
Phone: 703.709.5500
E-Mail: comment@intercon.com

Q: How do I download the latest software?

A: There are two ways:
1) FTP to: Host: ftp.psi.com
Dir: psilink
File: psilink.zip
Mode: binary
2) PSILink Bulletin Board System: 703.904.4272

Q: How do I get your PSILink software for free off of the Internet?

A: You can use anonymous FTP. (See above.)

Q: Do I get upgrades?

A: You can anonymously FTP them.

Q: Do I read my mail on line? What do you mean by store and forward?

A: Mail is read offline. As there are no connect time charges for Class A dialups, PSILink stays online as briefly as possible. This has the added benefit of keeping your phone bill at a minimum.

Q: How can I tell how much News and FTP I have downloaded? Will you let me know if I am over or close to the limit?

A: PSILink does not provide reports at the current time. Since an unlimited amount of FTP and News can be downloaded, you will want to keep track of how much FTP and News you are downloading. File sizes are displayed inside specific newsgroup folders, or when using FTP, in the dialog box under "Services: Status of File Requests." NOTE: 50 megabytes of FTP and 50 megabytes of News are included with PSILink Basic. Additional megabytes over 50 of FTP

(Continued...)

(Continued...)

Q: Can I attach and send files like MSWord or Lotus 1,2,3 files, to an E-mail message?
A: Absolutely. And unlike Compuserve or other services, there is no message size limitation.

Q: Is/Will there be a 1-800 number?
A: This is under consideration.

Q: Will PSILink support v.32bis or PEP/Turbo PEP?
A: Again, this is currently under consideration.

Q: I use MCIMail/Sprintmail/XYZmail/Anymail now. How is PSILink any different from that E-Mail?
A: The primary difference between PSILink and the other services is, PSILink Basic provides unlimited USENet News and anonymous FTP services. In addition, PSILink affords the user an Internet E-Mail address (account@psilink.com).

Q: If there isn't a Class A or Class B number for me to use, can I use Telenet or TYMNET?
A: No.

Q: What will my address be, and will someone know who I am with that address?
A: Your address consists of your account name followed by psilink.com:

account@psilink.com

If you include your name in the Setup information, your address will look like:

"Your Name"<account@psilink.com>

Q: Can more than one person use it at the same time?
A: No.

Q: What is the protocol that is used between my PC and your server?
A: It is called the PSILink Transport Protocol (PTP). It is proprietary to PSI.

Q: How much space does PSILink take on my hard drive?
A: 1 Megabyte or more, depending on how many messages you save.

Q: Will you send me all of the numbers to access the service?
A: They are built into the software.

Q: What is USENet News?
A: USENet News is the world's largest distributed bulletin board system with over 4,000 message areas and over 40 million bytes of information per day.

Q: What is FTP?
A: FTP is the mechanism to transfer files over the Internet.

Q: Can I do v.42bis or MNP-5 data compression?
A: V.42bis on Class A High Speed only.

Q: Will PSILink ever support WAIS, IRC, Gopher or other new Internet utilities?
A: These are all under consideration.

Q: Will PSILink ever support Telnet?
A: Whereas PSILink is not an "interactive" service, it will not support Telnet.

Q: Will there be a UNIX version?
A: PSI, Inc. does not have a UNIX version planned at the present time; however, if customer demand warrants, consideration will be given to developing one.

Q: Will there be an OS/2 version?
A: Similarly, consideration will be given should customer demand warrant it.

Q. Does PSI, Inc. have other services?
A: Yes. For further information send E-mail to: all-info@psi.com (auto directory response).

PERFORMANCE SYSTEMS INTERNATIONAL, INC.
510 Huntmar Park Drive
Herndon, VA 22070
Phone: +1 703.709.0300
Fax: +1 703.904.1207

FAXBACK INFO: 1 800.FAX.PSI1
E-mail: *psilink-info@psi.com*

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PSILink SM

GLOBAL MESSAGING ACCESS

FOR PSI INTERNAL USE ONLY

PSILINK I.D. : _____

DATE ASSIGNED: _____

PSILINK PROCESSOR INIT.: _____

PSILINK[SM] ORDER FORM

To order the PSILink Global Messaging Access service, please complete and sign the Order Form below and send it via fax at +1 703.904.1207, or via U.S. Mail to: PSI, Inc., PSILink Account Administrator, P. O. Box 592, Herndon, VA 22070. You will receive your account information and software via U.S. Mail. Please print or type the following information:

NAME: _____ TITLE: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

E-MAIL: _____ PHONE: ___/_____ (AREA CODE) FAX: ___/_____ (AREA CODE)

Please check the appropriate box(es) below. **NOTE:** There is a one-time registration fee of $19.

- ☐ I want PSILink Lite Service (1200-2400 bps access) at $0/Mo.*
- ☐ I want PSILink Lite Service (9600 bps access) at $19/Mo.*
- ☐ I want PSILink Lite Service (V.32bis/14.4 Kbps access) at $29/Mo.**
- ☐ I want the PSILink Wireless Option in addition to the above checked service for a one-time registration fee of $50 and $.25/1000 bytes of messaging (usage based).♠
- ☐ I want PSILink Basic Service (1200-2400 bps access) at $19/Mo.*
- ☐ I want PSILink Basic Service (9600 bps access) at $29/Mo.*
- ☐ I want PSILink Basic Service (V.32bis/14.4 Kbps access) at $39/Mo.**

♠ Not available for PSILink for Windows.

* Available only for PSILink for Windows

Not available for PSILink for HP 95LX, HP 100LX.

I understand and will abide by the Terms and Conditions stated within this document as of the date set forth for the PSILink Service, and agree to pay by the credit card indicated below.

X (SIGNATURE REQUIRED) _____ DATE _____

☐ Discover ☐ VISA ☐ MasterCard ☐ American Express

CREDIT CARD PAYMENT - BILLED MONTHLY

NAME AS IT APPEARS ON MY CREDIT CARD:

CARD NUMBER

EXPIRATION DATE

SOFTWARE (CHECK ONE): ☐ HP 95LX ☐ DOS ☐ Windows* ☐ HP 100LX

*Microsoft Windows version 3.1 is required to run PSILink for Windows

PSILINK SERVICE TERMS AND CONDITIONS

This Agreement is by and between Performance Systems International, Inc., duly authorized and existing under the laws of New York State with its main office at 510 Huntmar Park Drive, Herndon, Virginia, 22070 ("PSI"), and the Customer (as above) for the provision by PSI or its subcontractors of certain electronic communications services.

1. I, as the Customer, understand and accept the Terms and Conditions set forth herein and will remit payment in the appropriate amount indicated above, as well as the one-time registration and software distribution fee. I agree to pay for the PSILink service by VISA, MasterCard, American Express or Discover credit card.

2. Late Payment. Payments not received will result in termination of the Customer's PSILink account. Termination does not remove Customer's responsibility under this Agreement to pay all fees incurred up to the date of termination or collection fees.

3. Software Distribution Method. With each service order, PSI distributes its software ONLY on 3.5 inch 1.44Mbyte DOS diskettes. In addition, PSI makes its software available via anonymous FTP on *ftp.psi.com* in the *psilink* directory and via the PSILink Bulletin Board System.

4. Service Warranties. With respect to the services provided, PSI, Inc. makes no warranties of any kind, whether expressed or implied, including any implied warrantee or merchantability or fitness of this service for a particular purpose. PSI, Inc. takes no responsibility for any damages suffered by Customer, including, but not limited to, loss of data from delays, nondeliveries, misdeliveries, or service interruptions caused by PSI's own negligence or Customer's errors and/or omissions.

5. Acceptable Use. This service may only be used for lawful purposes. Materials and/or transmission in violation of any local, state or Federal regulation(s) is prohibited. This includes, but is not limited to, copyrighted material, threatening or obscene material, or material protected by trade secret. Customer agrees to indemnify and hold harmless PSI, Inc. from any claims resulting from Customer's use of this service which damages Customer or any third party.

6. Use of Information. Use of any information obtained via this service is at Customer's risk. PSI, Inc. specifically denies any responsibility for the accuracy or quality of information obtained through its services.

Continued on Page 2

† See Sections 17, 18, and 19 of the "PSILink Service Terms and Conditions" for additional PSILink pricing information.

PSILink Service Terms and Conditions (Continued from Page 1)

7. Use of Services. Use of these services will involve listing Customer's participation in relevant directories.

8. Use of Other Networks. Use of other organization's networks or computing resources are subject to their respective permission and usage policies.

9. Inappropriate Usage. PSI, Inc., or other relevant authorities may determine inappropriate usage of this account and the privilege may be revoked at PSI's discretion. Should this occur, the Customer will be informed in writing of this action.

10. Change of Status. PSI will occasionally require new registration and account information by the Customer to continue this service. In addition, the Customer shall notify PSI in writing of any changes in the account information, such as address.

11. Billing and Minimum Term. The Customer will be billed no later than the first business day of the month after PSI receives his/her order in Reston, VA for the coming month's fixed service costs, as well as the past month's usage-based fees (such as Class B dialup access, wireless fees, and excess file transfer and USENET News). The first billing will include the registration fee. Fixed service charges are billed in one month increments; they are not prorated under any circumstances, including cancellation.

12. Limitation of Access. This service is to cover network access by the Customer only to any organization, person, etc. through the PSI service, and does not extend to any other person, corporation or entity, including affiliates of the Customer, regardless of their relationship with the Customer.

13. Terms. PSI, Inc. reserves the right to change the above terms and conditions by notifying the Customer in writing at least 30 days in advance of the effective date of the change. Use by the Customer after the effective date constitutes acceptance of the new terms and conditions.

14. Cancellation. PSI reserves the right to cancel this service with written notice reimbursing unused fees where appropriate on a pro-rata basis.

15. Entire Agreement. This Agreement represents the complete agreement and understanding of the parties with respect to the subject matter herein, and supersedes any other agreement or understanding, whether written or oral.

16. Notice of Customer Termination. This Service may be terminated by the Customer at any time upon thirty (30) day's prior written notice accepted only through the PSILink Change of Status and Software Update Form below. The Customer is responsible to pay all fees up to the date of termination of the service as determined by PSI. Notice of the Customer's service termination should be sent to: Accounts Receivable, PSI, Inc., P.O. Box 485, Herndon, VA 22070.

17. FTP and News. For "Basic" subscribers, the first 50 megabytes each of FTP and News is included in the monthly fee. Additional megabytes over 50 cost $1 per megabyte each for FTP and News.

18. Dialups. PSI's Class A dialups (only within the United States) do not incur any connection time charges. These numbers are available by sending electronic mail to classa-na-numbers@psi.com.

PSI's Class B dialups (available throughout North America and Europe) do incur connect time charges in increments of five minutes rounded upward. These numbers are available by sending electronic mail to classb-na-numbers@psi.com (North America) and classb-row-numbers@psi.com (Rest of the World). The rates are currently as follows:*

North America	8:00AM-8:00PM Eastern	$6.00/Hr.
	8:00PM-8:00AM Eastern	$2.50/Hr.
Rest of the World	Anytime	$18.00/Hr.

*Note: Rates are subject to change with notification.

19. Wireless Option. PSILink service using SMARTCOM Mobile Data's wireless networks is an option of the PSILink service. The cost for the PSILink Wireless Option is in addition to the normal monthly fee for PSILink service. The Wireless Option rate is as follows: a one-time registration fee of $50 and approximately $.25 per 1,000 bytes, with a minimum of $.03 per packet, and a $25 per month access fee.

PSILINK CHANGE OF STATUS AND SOFTWARE UPDATE FORM

PLEASE FILL OUT THIS FORM AND EITHER FAX IT TO PSI AT +1 703.904.1207, OR MAIL IT TO: PSI, INC.
PSILINK ACCOUNT ADMINISTRATOR
P. O. BOX 592
HERNDON, VA 22070

ASSIGNED PSILINK ACCOUNT NAME: _____

☐ I have a new address. *(PLEASE COMPLETE NEW ADDRESS SECTION BELOW)*

SERVICE CHANGE: **NOTE: ALL CHANGES, OTHER THAN TERMINATION, INCUR A $19 ADMINISTRATION FEE.**

☐ I want PSILink Lite Service at 1200-2400 bps access.

☐ I want PSILink Lite Service at 9600 bps access.

☐ I want PSILink Lite Service at 14400 bps (V.32bis) access.*

☐ I want the PSILink Wireless Option.*

* PSILink Wireless Option is not available for PSILink for Windows.

* Available only for PSILink for Windows

☐ I want PSILink Basic Service at 1200-2400 bps access.*

☐ I want PSILink Basic Service at 9600 bps access.*

☐ I want PSILink Basic Service at 14400 bps (V.32bis) access.*

☐ I no longer want the PSILink Wireless Option.

☐ Please terminate my service.

* Not available for PSILink for HP95LX/HP100LX

SOFTWARE AND DOCUMENTATION:

Please send me updated PSILink Software and a User's Guide ($19): ☐ DOS ☐ HP 95LX ☐ HP 100LX ☐ Windows*

* Microsoft Windows version 3.1 is required to run PSILink for Windows

NAME: _____

NEW ADDRESS: _____

NEW PHONE: _____

STATE: _____ *ZIP:* _____ *NEW FAX:* _____

X _____
SIGNATURE REQUIRED *DATE*

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WORLD-DIAL from PSI: Around the world access to the Internet without "out of this world" rates.

telnet
tn3270
rlogin
XRemote



PSI's WORLD-DIAL Service

PSI, the leader in value-added internetworking services now provides WORLD-DIAL Service. WORLD-DIAL provides a simple, low-cost way for you to access your corporate site's local area network (LAN) linked to the global Internet via local dialup numbers. WORLD-DIAL makes it possible for you to access computers on the Internet all over the world from many cities throughout the U.S. Easy access is available from numerous locations such as an X-terminal at the office, a home computer, or portable laptop while traveling.

telnet, tn3270, rlogin, XRemote

WORLD-DIAL supports all the standard Internet interactive terminal access protocols, like *telnet* and *rlogin*, which are supported by 100% of all multiuser Internet hosts. In addition, *telnet 3270* (or *tn3270*), a standard for IBM 3270 access over TCP/IP, is supported for those IBM hosts that are attached to the Internet.

For those who use the power of network graphics, the commercial standard of *XRemote* is supported on numerous X-terminals and X-terminal software packages that support it. *XRemote* provides extremely fast X performance, two to three times that of any mere Serial Line Interface Protocol (SLIP) connection.

All You Need to Use WORLD-DIAL

All you need to use WORLD-DIAL is a terminal or communications package like CrossTalk, MacTerminal or Kermit for your PC or Macintosh, and a modem. WORLD-DIAL supports 1200, 2400, 9600 and 14400 baud access along with V.42 and V.42bis error correction and compression on all 9600 and 14400 baud rotaries.

If your X-terminal or X software package supports *XRemote*, then the addition of a modem should provide you with Internet X access at 9600 or 14400 baud.

Once you sign up for WORLD-DIAL, we'll send your account information, a manual, and a list of the most-up-to-date local access numbers in the U.S.

Local Dialup Numbers

PSI has established local dialup service numbers in many major cities throughout the U.S. A partial list of the cities include:

Ann Arbor	Boston	Columbus
Atlanta	Buffalo	Dallas
Austin	Chicago	Detroit
Garden City	New York	Portland
Hartford	Orlando	San Francisco
Houston	Phoenix	Seattle
Los Angeles	Philadelphia	Spokane
Newark	Pittsburgh	Washington, DC

For the most-up-to-date list of local access dialup numbers, send electronic mail to the auto-reply list, *numbers-info@psi.com*.

WORLD-DIAL is Priced Competitively

WORLD-DIAL is priced very competitively compared to other similar usage-based dialup Internet access services. The cost for WORLD-DIAL is a one-time registration fee of $19 plus the following access charges:*

Low-speed, 2400 baud, V.22bis access:	
Prime Time:	$2.75/hour
Non-Prime Time:	$1.25/hour
High-speed, 9600 baud, V.32 access:	
Prime Time:	$4.50/hour
Non-Prime Time:	$3.00/hour
Very-High-speed, 14.4 Kbps access:	
Prime Time:	$6.50/hour
Non-Prime Time:	$4.00/hour

Note: Prime Time is 8:00 AM to 8:00 PM Eastern, Monday-Friday. Non-Prime Time is any time other than Prime Time.

*There is a monthly minimum of $9.

Support

- Support for WORLD-DIAL is available 24 hours per day, 7 days per week
- There are no extra charges for support, it's *free*

All brands, product and service names mentioned are trademarks or registered trademarks of their respective owners.



WORLD-DIAL SM

For additional information about WORLD-DIAL or other PSI internetworking services, contact Inside Sales at:

510 Huntmar Park Drive, Herndon, VA 22070 • Phone: 1 800.82psi82 (+1 703.709.0300) • FAXBACK Info: 1 800.fax.psi.1 • E-Mail: info@psi.com

PERFORMANCE SYSTEMS INTERNATIONAL, INC.

WORLD-DIAL TERMS AND CONDITIONS

1. I agree to pay a one-time registration fee of $19 and the following rates* for PSI's WORLD-DIAL service:

Low-speed, 2400 baud, V.22bis access:		
	Prime Time:	$2.75/hour
	Non-Prime Time:	$1.25/hour
High-speed, 9600 baud, V.32 access:		
	Prime Time:	$4.50/hour
	Non-Prime Time:	$3.00/hour
Very-High-speed, 14.4 Kbps access:		
	Prime Time:	$6.50/hour
	Non-Prime Time:	$4.00/hour
Note:	Prime Time is 8:00 AM to 8:00 PM Eastern, Monday-Friday.	
	Non-Prime Time is any time other than Prime Time.	

*There is a monthly minimum of $9.

Payment made by credit card will be billed on the first day of each month, for the coming month, to my credit card, save for the first billing. The first billing will be invoiced upon receipt of this Order Form along with the registration fee, and will include service through the last day of the next month from the date of receipt at PSI, Inc. The minimum term is one month; usage is in five minute increments rounded upwards. Monthly service is not prorated.

2. PSI WORLD-DIAL Service accounts cannot be transferred or used by another individual.

3. No more than one dialup connection can be used at any time by the registered individual user (hereinafter "Registrant").

4. With respect to the services provided, PSI, Inc. makes no warranties of any kind, whether expressed or implied, including any implied warranty or merchantability or fitness of this service for a particular purpose. PSI, Inc. takes no responsibility for any damages suffered by the Registrant, including, but not limited to, loss of data from delays, nondeliveries, misdeliveries, or service interruptions caused by PSI's own negligence or Registrant errors and/or omissions.

5. This service may only be used for lawful purposes. Materials and/or transmission in violation of any local, state or Federal regulation(s) is prohibited. This includes, but is not limited to, copyrighted material, threatening or obscene material, or material protected by trade secret. Registrant agrees to indemnify and hold harmless PSI, Inc. from any claims resulting from Registrant's use of this service which damages Registrant or any third party.

6. Use of any information obtained via this service is at the Registrant's risk. PSI, Inc. specifically denies any responsibility for the accuracy or quality of information obtained through its services.

7. Registration for this network service will involve listing Registrant's participation in relevant directories.

8. Use of other organization's networks or computing resources are subject to their respective permission and usage policies.

9. PSI, Inc. or other relevant authorities may determine inappropriate usage of this account and the privilege may be revoked at PSI's discretion. Should this occur, the Registrant will be informed in writing of this action.

10. PSI will occasionally require new registration and account information by the Registrant to continue the WORLD-DIAL service. In addition, the Registrant shall notify PSI in writing of any changes in the account information, such as change in address. If the Registrant no longer wants to continue using the WORLD-DIAL service, then he/she agrees to notify PSI in writing at least 30 days in advance of the desired termination date.

11. PSI, Inc. reserves the right to change the above terms and conditions by notifying the Registrant in writing at least 30 days in advance of the effective date of the change. Use by Registrant after the effective date constitutes acceptance of the new terms and conditions.

12. PSI does not warrant the applicability of this service for your application, neither does it warrant the availability of a local phone number in your area.

13. PSI reserves the right to cancel this service with written notice reimbursing unused fees where appropriate on a pro-rata basis.

14. If the user uses the NSFNET or other government networks to access a remote host or server, then he/she must abide by the NSFNET Acceptable Use Policy as stated below. Any violation of this policy will result in the immediate termination of this WORLD-DIAL service account without notice.

NSFNET ACCEPTABLE USE POLICY

GENERAL PRINCIPAL:

1. NSFNET Backbone services are provided to support open research and education in and among US research and instructional institutions, plus research arms of for-profit firms when engaged in open scholarly communication and research. Use for other purposes is not acceptable.

SPECIFICALLY ACCEPTABLE USES:

2. Communication with foreign researchers and educators in connection with research or instruction, as long as any network that the foreign user employs for such communication provides reciprocal access for communication with U.S. researchers and educators.

3. Communication and exchange for professional development, to maintain currency, or to debate issues in a field or subfield of knowledge.

4. Use for disciplined dissemination of information about procurement opportunities or other federal activities, results of federal research, and rules, regulations, programs, policies, and procedures.

5. Use for applying for or administering grants or contracts for research or instruction, but not for other fundraising or public relations activities.

6. Any other administrative communications or activities in direct support of research and instruction.

7. Announcements of new products or services for use in research or instruction, but not advertising of any kind.

8. Any traffic originating from a network of another member agency or internetwork with restrictions unacceptable to NSFNET that violates the NSFNET Acceptable Use Policy, or that violates the other agency's Acceptable Use Policy, is prohibited.

9. Communication incidental to otherwise acceptable use, except for illegal or specifically unacceptable use.

UNACCEPTABLE USES:

10. Use for for-profit activities (consulting for pay, sales or administration of campaigns, for example), unless covered by the General Principle or as a specifically acceptable use.

11. Extensive use for private or personal business. This statement applies to use of the NSFNET backbone only. NSF expects that connecting networks will formulate their own policies. The NSF Division of Network, Communications Research and Infrastructure will periodically review the policy and practice of the backbone service for compliance.

PSI WORLD-DIAL ORDER FORM

To apply for a WORLD-DIAL service account to the PSI networks, please complete and sign the Order Form below and send it via fax at +1 703.904.1207, or via U.S. Mail to PSI, Inc., Post Office Box 592, Herndon, VA 22070. WORLD-DIAL provides 2400 baud/V.22bis, 9600 baud/V.32 and V.32bis PSINet and Internet access 24 hours per day, 7 days per week. Please print or type the following information:

I would like to apply for a PSI WORLD-DIAL service account:

Name: _____ Title: _____

Address: _____

City: _____ State: _____ Zip: _____

Internet E-Mail: _____ Phone: _____ Fax: _____

FOR PSI INTERNAL USE ONLY
WORLD-DIAL I.D.: _____
DATE ASSIGNED: _____
WORLD-DIAL PROC. INIT.: _____

I understand and will abide by the Terms and Conditions stated within this document as of the date set forth for the PSI WORLD-DIAL service, and agree to pay by the credit card indicated below.

Signature Required _____ Date _____

Credit Card Payment - Billed Monthly

☐ VISA ☐ MasterCard ☐ ☐ Discover

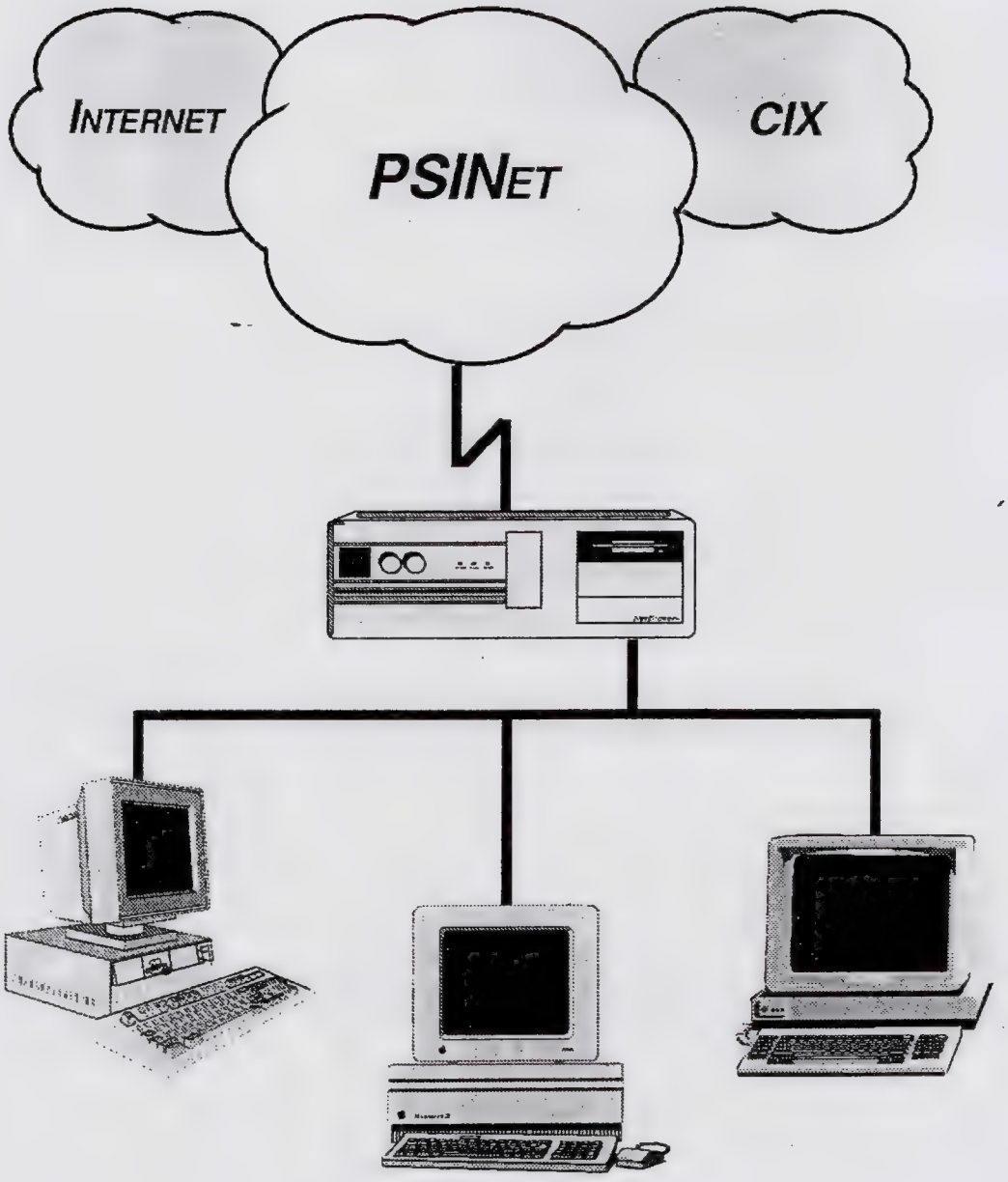
Name as it appears on my Discover, VISA, MasterCard or American Express:

Card Number

Expiration Date

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LOCAL AREA NETWORK ACCESS TO THE INTERNET



LAN-DIAL Service

INTERNET ACCESS

DIALUP TCP/IP INTERNETWORKING

NATIONWIDE LOCAL DIALUPS

PPP AND SLIP SUPPORT

SUPPORTS V.32, V.32BIS, V.42 AND V.42BIS

LAN DIAL SM

PSI's LAN-DIAL Service

What is LAN-DIAL Service?

PSI s LAN-DIAL service provides "on-demand" packet access into the nationally available PSINet® and global Internet using ordinary phone lines for your entire local area network (LAN) of computer systems.

LAN-DIAL is useful to organizations interested in entry level LAN integration into PSINet and the global Internet, without the complication and cost of leased lines and sometimes unpredictable installation by the phone company. Control and security is in the hands of the customer, as only they can make the phone call to internetwork.

In addition, LAN-DIAL service includes documentation, support from PSI s Customer Support Group (CSG), and USENET/News.

Unlike other networks, there are no additional costs for connection time, quantity of packets, or international access. A fixed, inexpensive fee, which can be budgeted in advance of installation, is the standard for the '90s.

LAN-DIAL Features

LAN-DIAL supports V.32 modems that can provide up to 19.2 Kbps performance with standard V.42bis modem compression. LAN-DIAL also supports V.32bis in select cities in the U.S. V.32bis modems provide 14.4 Kbps and 9.6 Kbps throughput. With V.42bis compression, even higher throughput is possible.

PPP and SLIP Support

LAN-DIAL service uses these state-of-the-art serial line protocols to provide the necessary service and performance that your LAN internetworking requires.

Compatibility

Morning Star Technologies Express Router

Morning Star's Express Router is a high-performance solution for both dialup and dedicated TCP/IP network routing.

The Express Router supports both PPP and SLIP serial line protocols, as well as the Open Internet Standard, RFC1294 and features full security and packet filtering capabilities.

Morning Star's Express Router is fully compatible with LAN-DIAL service and may be purchased directly from PSI.

Telebit's NetBlazer™

Telebit has a sophisticated product, called the NetBlazer™, which can be configured for connection on power-up or when a host needs external access, all transparently.

Telebit's N2-1E model is compatible with LAN-DIAL service, and PSI recommends either a Telebit T1600, T2500 or T3000 modem for maximum interoperability and reliability. Telebit routers and modems may be purchased directly from PSI.

Rockwell International's NetHopper™

Rockwell offers a low-cost, easy-to-use dialup TCP/IP router called the NetHopper™. It features a Rockwell internal modem capable of 14.4 Kbps with V.42bis compression. It's SNMP manageable and comes with full security and IP filtering.

Rockwell's NetHopper™ NH-1 model is fully compatible with LAN-DIAL service.

Morning Star Technologies UNIX Software

Morning Star s PPP Communications Software is fully compatible with LAN-DIAL service and may be purchased from PSI. This software for SUN, NeXT, Ultrix and SCO UNIX machines turns them into compatible routers.

Other

PPP is also available from some UNIX vendors and, in specific cases, (BSD UNIX, and SUNOS) from PSI during initial installation.

National Availability

PSINet is a national internetwork which uses the common networking language of TCP/IP to provide service to thousands of organizations throughout the U.S. and by direct attachment to the NSFNET, the Commercial Internet Exchange (CIX), and other international networks, to tens of thousands of other organizations throughout the globe; this is the global Internet.

Throughout the U.S., PSINet Points-of-Presence (POPs) have been deployed with new cities being added every month. These POPs are co-located in secure facilities, leased from telephone companies and provide privacy, high reliability, direct access to fiber optic infrastructure, and professional on-site maintenance-- a unique and unmatched capability. PSI s backbone is a mixture of T3 and T1 circuits connected to PSI's ATM switches and routers. No other Internet access service provider has the technical architecture and control that PSI has in providing Internet services.





Fast Delivery

A completed LAN-DIAL service Order Form, purchase order (accepted by fax) or PSI credit card validation form (if applicable) can have a connection available (on a shared rotary) in five to seven business days.

Network and Domain Registration and Support

PSI's network and domain registration and support cuts through the delays and errors when dealing with the various registration organizations. Highly reliable servers provide fault-tolerant support of your domain name and network routing.

Permanent IP Address

LAN-DIAL service provides the customer with a permanent network number, or IP address, which allows others on the Internet to *ftp* or *telnet* into their site.

USENET News Feed

LAN-DIAL service includes a full NEWS feed from UUPSI, one of the top 50 USENET sites, providing timely access to the largest distributed bulletin board service (BBS) in existence.

Simple Leased Line Upgrade

For LAN-DIAL service customers who wish to upgrade to a leased line service, such as PSI's InterFrame™. The process is easy and can be installed by PSI in a few weeks.

PSINet Service Guarantee

PSINet is a professionally run, extremely reliable network with contractual service guarantees on delivering the service. No other service provider will provide a guarantee.



Support and Service

PSI's Network Information and Support Center (NISC) provides 24 hours per day, 7 days per week support, and can be called, toll free, for any network operations problem. PSI also has an experienced Field Service team available for dispatch.

In addition, PSI provides unlimited phone and electronic mail consulting from the Customer Support Group (CSG) to integrate your facility into the Internet.

LAN-DIAL Service User's Manual

As part of customer support, an in-depth, detailed user manual is sent via two-day courier in the U.S. to all new LAN-DIAL service customers.

Hardware and Software Available Through PSI

For the customer's convenience, compatible hardware (modems and routers) and communications software which support LAN-DIAL service may be purchased directly through PSI.

Free Training and Tutorials

On a regular basis, PSI provides training through a free, three-day tutorial in various cities throughout the US. To find out when the next tutorial is scheduled, send e-mail to *tutorial-info@psi.com* and an automatic message will be generated.

Commercial Internet Exchange (CIX) Participation

Through the Commercial Internet Exchange (CIX), commercial internetworking providers are interconnected to provide an internet that is free of any restrictions on commercial usage. PSI is a co-founder of the CIX.

Future Capabilities of LAN-DIAL Service

During the first quarter of 1994, LAN-DIAL service will support V.Fast modem technology. V.Fast will allow substantially faster throughput of up to 28.8 Kbps.

LAN-DIAL Service Pricing

Pricing for PSI's LAN-DIAL service is as follows:

LAN-DIAL:

One-Time Registration Fee:	$ 300
Monthly Service Fee:	$ 275

LAN-DIAL Overview

- *"On-Demand" Internet Access*
- *LAN Access to the Internet*
- *TCP/IP Internetworking*
- *PPP and SLIP Compatible*
- *Local Dialups in Major U.S. Cities*
- *Supports V.32, V.32bis, V.42 and V.42bis*
- *USENET News Feed Included*

LAN-DIAL Service Cities



LAN-DIAL Cities:

Akron, OH
Albany, NY
Ann Arbor, MI
Atlanta, GA
Austin, TX
Baltimore, MD
Boise, ID
Boston, MA
Chicago, IL
Cincinnati, OH
Cleveland, OH
Columbus, OH
Dallas, TX
Dayton, OH
Denver, CO
Detroit, MI
Dublin, OH
Eugene, OR
Fort Wayne, IN
Fredericksburg, VA
Garden City, NY
Harrisburg, PA
Hartford, CT
Herndon, VA
Houston, TX
Indianapolis, IN
Islip, NY
Jacksonville, FL
Kansas City, MO
Lima, OH
Los Angeles, CA
Manchester, NH
Mansfield, OH
Miami, FL
New Haven, CT
New York, NY
Newark, NJ
Norfolk, VA
Olympia, WA
Orlando, FL
Philadelphia, PA
Phoenix, AZ
Pittsburgh, PA
Portland, ME
Portland, OR
Princeton, NJ
Providence, RI
Richmond, VA
Rochester, NY
Sacramento, CA
Salem, OR
San Francisco, CA
Santa Clara, CA
Seattle, WA
South Bend, IN
Spokane, WA
Stamford, CT
St. Louis, MO
Sunnyvale, CA
Syracuse, NY
Tampa, FL
Toledo, OH
Tri-Cities, WA
Urbana, IL
Washington, DC
Westford, MA
White Plains, NY
Yakima, WA
Youngstown, OH

Note:

For the most-up-to-date list of cities that support LAN-DIAL service, send e-mail to *pop-info@psi.com*. An automatically generated response will be sent to your electronic mailbox. For the most current list of local access phone numbers for LAN-DIAL service, send e-mail to *numbers-info@psi.com*. Again, an automatic response will be generated.

For Additional Information, Contact:

Inside Sales:
1 800.82psi82
(1 800.827.7482)

Performance Systems International, Inc.
510 Huntmar Park Drive
Herndon, VA 22070
Voice: +1 703.709.0300
Fax: +1 703.904.1207
FAXBACK INFO: 1 800.faxpsi1
E-mail: info@psi.com

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LAN DIAL SM

Questions Most Often Asked about PSI's LAN-DIAL Service (LAN-DIAL)

1. What type of organizations will LAN-DIAL benefit?

- Interested in entering inexpensively into public internetworking for PSINet and Internet access
- Located in areas, such as Metro DC, where phone calls are not time charged
- Installed a base of TCP/IP software and hardware that supports PPP
- Using mobile applications for traveling staff and remote offices

2. Can more than one host use a LAN-DIAL?

Yes. LAN-DIAL provides access to as many hosts that support TCP/IP that are on your LAN.

3. Can more than one person use a LAN-DIAL?

Yes. Every single-user machine (PC, MAC) and every time-sharing machine (a UNIX machine for example) can simultaneously use the LAN-DIAL connection due to the functionality of TCP/IP packet switching which shares the available bandwidth.

4. Where can I find information on implementations of TCP/IP for my computer?

General "neutral" information on TCP/IP implementations, are available in the "DDN Protocol Implementation and Vendors Guide", available from:

DDN Network Information Center
SRI International
333 Ravenswood Avenue
Room EJ291
Menlo Park, CA 94025

Nearly all computer vendors support TCP/IP, so your computer account representative should be able to help you.

5. What Kind of Support can I get from PSI?

PSI s Customer Support Group (CSG) will help to do your initial integration and deal with post integration issues by phone and email.

6. Does LAN-DIAL support SLIP or PPP?

LAN-DIAL supports both SLIP and PPP, including VJ Header compression. PPP is the high tech successor to the veteran SLIP; much better functionality is available through PPP especially in LAN access situations.

7. Is PPP available?

Yes. Both commercial router products and public domain implementations exist.

8. Can I FTP, or use other normal TCP/IP applications with LAN-DIAL?

Yes. All standard TCP/IP applications (FTP ,TELNET, NNTP, Finger, etc.) work as they would with a dedicated circuit installation.

9. Can LAN-DIAL give me Internet access?

Yes.

10. Can I have a network number with LAN-DIAL?

Yes. If you do not currently have a network number, PSI will assign you a Class C network number.

11. Can I have a domain name with LAN-DIAL?

Yes. In fact, PSI will provide servers for your domain name if you require it.

12. Can another site initiate a connection to me if I'm using LAN-DIAL?

Yes. Your network number will be made known to the world through the DNS, and other organizations will be able to connect to you. However, if you are not dialed up, these connections will fail until you do.

13. How does electronic mail work?

There are three different ways to do email through LAN-DIAL:

(a) the same as with any other leased line Internet site - you do SMTP directly with them, they do SMTP directly with you.

(b) similar to (a), with the addition, if you're not dialed up, a PSI host will temporarily accept your mail and

Continued on reverse side

relay it to you. This makes use of the DNS MX record in use with hundreds of PSI customers.

(c) A PSI Host becomes the standard mail relay (via MX) for your entire domain. When you dialup, you establish a UUCP/TCP connection and all of your mail gets downloaded and uploaded for distribution.

14. What kind of modem access does LAN-DIAL support?

V.32, V.42 and V.42bis modems are supported.

15. Does PSI have a 1.800 number to report modem problems?

Yes. Our 24-hour operations center will deal with these issues. The toll free number is 1.800.836.0400.

16. How does LAN-DIAL complement my SCS and CCS connection?

With a direct leased line connection to PSINet/Internet through SCS and CCS, an office could provide services to its remote offices, staff, suppliers, or clients who would use LAN-DIAL.

17. Where can I get PPP Router functionality?

DEDICATED EQUIPMENT:

Morning Star Technologies

Morning Star's Express Router is a high-performance solution for both dialup and dedicated TCP/IP network routing.

The Express Router supports both PPP and SLIP serial line protocols, as well as the Open Internet Standard, RFC1294 and features full security and packet filtering capabilities.

Morning Star's Express Router is fully compatible with LAN-DIAL services and may be purchased directly from PSI.

Telebit:

Telebit has a sophisticated product called the NetBlazer™, which can be configured for connection on power-up or when a host needs external access, all transparently.

Call 1-800-TELEBIT (408.734.4333). The N2-1E model is sufficient, and PSI recommends either a T1600, T2500 or T3000 modem from Telebit for maximum interoperability and reliability.

PPP for UNIX:

This is available from some UNIX vendors and, in specific cases, (BSD UNIX, and SUNOS) from PSI during initial installation.

18. Do I pay for usage, such as minutes or packets?

No. This is a flat fee service. You can dialup for 30 minutes a day or 24 hours per day; the fee is the same.

19. Can I get a USENET/NEWS feed?

Yes, it is included at no cost with the LAN-DIAL Service. A full or partial feed using NNTP is provided through UUPSI, one of the top USENET distributors in the US. In addition, CLariNet information services are available through UUPSI.

20. Will LAN-DIAL change in the future?

LAN-DIAL will evolve to meet the customer needs; "dialup" or "switched" services are of strategic importance to PSI.

21. Does PSI provide service guarantees?

Yes. If our dialups fail and we can't provide you with an alternative, you are granted additional service days.

22. Are there any discounts?

Yes. If you pay for a year in advance, a 10% discount is applied.

23. Can PSINet LAN-DIAL dial back to me?

No. LAN-DIAL, as initially rolled out, will not support this; however, PSI is actively looking at this capability for the future. This is a good example of an area of evolution for LAN-DIAL.

24. Can I get LAN-DIAL outside of the US?

Yes. If you have X.25 access and your TCP/IP implementation supports RFC-877 encapsulation, then you can have LAN-DIAL access for International locations. Many vendors support RFC-877, including SUN. Contact your vendor for support details.

25. What kind of performance can I expect?

With V.32 9600 bps signaling, and V.42 and VJ compression, sustaining around 19.2 Kbps should not be a problem.

26. How long does it take to get LAN-DIAL?

From the time PSI receives your purchase order, check, or PSI Credit Card Validation Form and Order Form at our office in Herndon, Virginia, you can be up in 5-7 business days.

27. What do I do next?

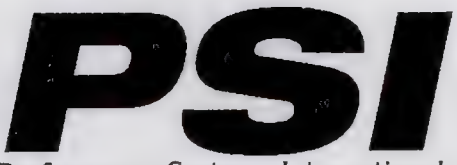
Call 1.800.82PSI82 (+1.703.709.0300) and ask for a LAN-DIAL Order Kit, or your local account representative to call you.

For further information, please contact:

Performance Systems International, Inc.
Post Office Box 592
Herndon, VA 22070
Phone: 1.800.82PSI82
+1.703.709.0300
Fax: +1.703.904.1207
Email: info@psi.com



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Performance Systems International, Inc.
510 Huntmar Park Drive
Herndon, Virginia 22070

LAN-DIAL SERVICE

✔ O R D E R ◆ K I T



LAN DIAL SM

Performance Systems International
Post Office Box 592
Herndon, VA 22070
Phone: +1.703.709.0300
1.800.82PSI82
Fax: +1.703.904.1207
Email: info@psi.com

LAN-DIAL SERVICE ORDER FORM

Customer Information:

Name: _____

Address: _____

_____

City/State/Zip Code: _____

Telephone Number: ____/_____

Customer Representative:

Name: _____

Title: _____

Department: _____

Phone Number: ____/_____ Facsimile Number: ____/_____

Electronic Mail Address: _____

This Agreement, by and between Performance Systems International, Inc., duly authorized and existing under the laws of the State of New York with its main office at 510 Huntmar Park Drive, Herndon, Virginia 22070 ("PSI"): and the Customer (as above) for the provision by PSI or its subcontractors of certain computer network services, for the use by the Customer.

1. Network Usage. PSINet® access shall be offered to the Customer in accordance with the criteria set by PSI which shall be appended hereto as Attachment A. The Customer shall be responsible for user/access security and network access. PSI provides no user access security with respect to any the Customer facilities or facilities of others. PSI will assist in network security breach detection or identification, but shall not be liable for any inability, failure or mistake in doing so.

2. LAN-DIAL Use. No more than one LAN-DIAL connection can be used at any time with a LAN-DIAL account as paid for by the customer and assigned by PSI. If two individuals or groups need to simultaneously access PSINet® through separate phone lines, then they would have to acquire two LAN-DIAL accounts, and so on. A LAN-DIAL session is defined as a connection with a PSI modem or access device using the public switched telephone system or public data networks (X.25, ISDN). This single phone line connection does allow for multiple individual user sessions.

3. PSI Technical Instruction and Information. PSI shall provide to the Customer, in accordance with the extant PSI policies, technical consultation and instruction regarding network hardware, software, access techniques and commands. In addition, PSI shall provide access by the Customer to copies of all its regular published reports concerning network usage, and shall offer the Customer access to relevant technical meetings and tutorials. PSI is not responsible to the Customer for the cost or expense of administrative, technical, emergency and support personnel at the Customer's location necessary for dealing with PSI and for providing and maintaining the Customer's own computer equipment, and PSI or other network access.

4. Service Commencement and Anniversary Date. "Service Commencement" refers to the fact that PSI begins immediately upon receipt of the executed Agreement and the Customer's purchase order to provide services such as registration, training and consultation. "Anniversary Date" refers to the day in which packets of data can be sent to the Customer's site from PSINet. Notwithstanding the above, the Anniversary Date shall be no later than 60 days from the Service Commencement date. After 90 days, Customer may terminate this service for inactivity with no penalty beyond the amount of the initial registration fee.

5. LAN-DIAL Service Fee. The Customer desires a LAN-DIAL service connection to PSINet®. For this service, the Customer shall commit to PSI through its purchase order and pay to PSI a one-time start-up fee of $300.00 for each service ordered and $825.00 per each quarter of service for each service ordered. The registration fee is non-refundable, and the quarterly service fees are independent of the amount of traffic or system access by users at the Customer's location.

Service Commencement is initiated on the basis of the receipt of this executed Agreement and such purchase order to pay to PSI the one-time start-up fee and quarterly service fees. Quarterly service fees shall be invoiced by PSI and such fees are payable to PSI either quarterly before the beginning of each quarter of LAN-DIAL, or Customer may pay the entire yearly amount within fifteen (15) days of the PSI invoice date which entitles the Customer to a 10% discount on yearly service fees.

The Customer may submit a purchase order for the first year's costs provided the purchase order meets PSI requirements. The actual purchase order must be submitted along with this signed Order Form. A purchase order number will not suffice. The Customer purchase order must contain the following language, "Notwithstanding any provisions to the contrary on the face of this purchase order, attachments to this purchase order, or on the reverse side of this purchase order, this purchase order is being used for administrative purposes only, and this order is placed under and subject solely to the terms and conditions of the PSI LAN-DIAL Order Form executed between the Customer and PSI."

6. No Warranties. Neither PSI nor its subcontractors warrant any connection to, transmission over, nor results or use of, any network connection or facilities provided (or failed to be provided) under this Agreement. The Customer is responsible for assessing its own computer and transmission network needs, and the results to be obtained therefrom.

7. Insurance. The parties shall each be responsible for assessing their own need for, and ability to maintain, property, casualty and liability insurance and shall obtain such insurance covering their risks as each sees fit. The parties agree not to make any claims against the other for any property loss (whether or not insured) and shall require their insurers, if any, to waive any right of subrogation against the others for any such loss.

8. **Limitation of Liability.** Except for cases of gross negligence or willful misconduct, neither party shall be liable to the other for any loss, damage, liability, claim or expense rising out of or in relation to this Agreement or the provision of the service or equipment, however caused, whether grounded in contract, tort (including negligence) or theory of strict liability. The parties agree to work in good faith to implement the purposes of this Agreement, but recognize that the network connection and services to be provided by PSI could not be made available under these terms or other similar terms without a substantial increase in cost if the parties were to assume a greater degree of liability to each other.

9. **Service Adjustments:** If a PSI point-of-presence (POP) fails due to it's equipment or circuit(s) between PSI POP's failing (except in the case of fire, flood or other act of God), and this failure results in the disruption of the Customer's service, then the following adjustments will be made:

If after four hours PSI has not provided the Customer an alternative access point, PSI will provide additional service days to the Customer beyond the contract term for any calendar day or portion thereof of the service disruption. Only one additional service day can be granted per calendar day outage(s).

10. **Term/Extension/Termination.** This Agreement shall extend from the date first written below until one year from the Anniversary Date, and shall be subject to such extensions as the parties may agree. The Customer may opt for continuation of this service by issuing a new purchase order to commit the relevant fees for the additional year with quarterly or annual invoicing.

Service beyond this period will be subject to continued relevant fees and quarterly payments and the LAN-DIAL agreement in force at the Anniversary Date. Use as of that date will be considered acceptance of the new agreement. Failure to renew services after subsequent anniversaries of LAN-DIAL will not relieve Customer of its obligation to compensate PSI for such services rendered, prior to the date of termination provided to PSI in accordance with this Agreement, and are subject to relevant fees.

This Agreement may be terminated by the Customer or by PSI at any time upon thirty (30) days' prior written notice. Termination by the Customer shall not create the right to a refund of any fees previously paid or payable, except in the event PSI is unable to connect the Customer to PSINet®.

11. **Notices.** All notices given by any party or required under this agreement shall be in writing and addressed to the relevant part(y)(ies) as follows:

Performance Systems International, Inc.
Post Office Box 592
Herndon, VA 22070
Attn.: Martin L. Schoffstall

The Customer:

See "Customer Representative" Information from Page 1

All notices shall be sent by posting in first class mail, postage prepaid, and shall be deemed as given five calendar days after posting.

12. **Limitation of Access.** This service is to cover network access by the Customer only to any organization, person, etc. through the PSI service, and does not extend to any other person, corporation or entity, including affiliates of the Customer, regardless of their relationship with the Customer. Customer includes all Customer staff and consultants paid by Customer while performing work for Customer.

As this is a fixed-price service, third party traffic, including packet access and electronic mail, sent from the Customer's facilities or received on behalf of the third party through the PSI service, is expressly forbidden under this Agreement. If USENET News is fed to another organization, no posting from that third party may be sent back through the Customer's connection to PSINet®.

Third party refers to separate non-Customer organizations or individuals using Customer's PSINet® connection for transfer of electronic data. It does not refer generally to organizations or individuals sending/receiving data to/from the Customer.

13. **Access to Other Networks through PSINet®.** Use of other networks may require approval of the respective network authorities and use will be subject to any acceptable usage policies such networks establish. Examples of such networks would be the NSFNET and ESNET. An example of an acceptable use policy can be found in Section C.

14. **The Customer Services.** All services to be provided by the Customer either in part or in total through PSINet® are appropriate subject to relevant Federal and State regulations. If these same services are offered through other networks, PSI accepts no responsibility for their authorization.

15. **No Assignment.** The Customer shall not sell, transfer, or assign this agreement without the prior written consent of PSI. Any act in derogation of the foregoing shall be null and void; provided, however, that any such assignment shall not relieve the Customer of its obligations under this Agreement.

16. **Severability.** If any provision of this Agreement is held by a court of competent jurisdiction to be contrary to law, the remaining provisions of this Agreement will remain in full force and effect.

17. **Entire Agreement.** This Agreement represents the complete agreement and understanding of the parties with respect to the subject matter herein, and supersedes any other agreement or understanding, written or oral. This Agreement may be modified only by a writing signed by all parties.

In witness whereof, the parties have entered into this agreement as of the date set forth:

PSI Corporate Officer (please type or print)	Customer Representative (please type or print)
PSI Corporate Officer Signature	Customer Signature
Date	Date



ATTACHMENT A

PSI, Inc.
ACCEPTABLE USE POLICY

These statements represent a guide to the acceptable use of PSI facilities.

PSI, Inc. recognizes as acceptable all forms of data communications across its network, except where Federally subsidized facilities of transport (such as national backbones like NSFNET) may require limitations, or State/Federal/International law prohibits. In those cases, use of the network should adhere to the general principle of advancing science and education through interexchange of information among research and educational institutions except where specific policy statements exist (see example, Attachment C).

In cases where data communications are addressed to recipients outside of the PSI supplied network and are carried over other regional networks or the Internet, PSI users are advised that acceptable use policies of those other networks apply and may, in fact, limit use.

If PSI is informed by Federal/State/International authorities of inappropriate or illegal use of PSI facilities and/or other networks these determinations will be binding on the Customer.

ATTACHMENT B

PSI NETWORK DOCUMENTATION

"LAN-DIAL Service" Product Sheet

ATTACHMENT C

NSFNET Backbone Service
ACCEPTABLE USE POLICY

GENERAL PRINCIPAL:

(1) NSFNET Backbone services are provided to support open research and education in and among US research and instructional institutions, plus research arms of for-profit firms when engaged in open scholarly communication and research. Use for other purposes is not acceptable.

SPECIFICALLY ACCEPTABLE USES:

(2) Communication with foreign researchers and educators in connection with research or instruction, as long as any network that the foreign user employs for such communication provides reciprocal access to US researchers and educators.

(3) Communication and exchange for professional development, to maintain currency, or to debate issues in a field or subfield of knowledge.

(4) Use for disciplinary-society, university-association, government-advisory, or standards activities related to the user s research and instructional activities.

(5) Use in applying for or administering grants or contracts for research or instruction, but not for other fund-raising or public relations activities.

(6) Any other administrative communications or activities in direct support of research and instruction.

(7) Announcements of new products or services for use in research or instruction, but not advertising of any kind.

(8) Any traffic originating from a network of another member agency of the Federal Networking Council if the traffic meets the acceptable use policy of that agency.

(9) Communication incidental to otherwise acceptable use, except for illegal or specifically unacceptable use.

UNACCEPTABLE USES:

(10) Use for for-profit activities (consulting for pay, sales or administration of campus stores, sale of tickets to sports events, and so on) or use by for-profit institutions unless covered by the General Principle or as a specifically acceptable use.

(11) Extensive use for private or personal business. This statement applies to use of the NSFNET Backbone only. NSF expects that connecting networks will formulate their own use policies. The NSF Division of Networking and Communications Research and Infrastructure will resolve any questions about this Policy or its interpretation.



PSI
Performance Systems International, Inc.
510 Huntmar Park Drive
Herndon, Virginia 22070

TO: LAN-DIAL Prospective Customer

FROM: Performance Systems International Services Administration

RE: PSI LAN-DIAL Service Commencement

Thank you for your interest in the LAN-DIAL Service (LAN-DIAL) offered by Performance Systems International, Inc. We look forward to providing you with quality internetworking services. Enclosed please find all the information needed to facilitate your computer network(s) integration into PSINet® and the Internet through LAN-DIAL.

To initiate this process, we will need you to furnish us with the following information:

- A completed **Order Form** (enclosed).
- A completed **Registration Form** (enclosed).
- A completed **Purchase Order** or **PSI Credit Card Validation Form** (American Express®, MasterCard®, Discover ® or VISA® accepted) for your first year/quarter connection costs.

If you submit a purchase order, it should contain the cost information provided by PSI. The terms of payment are defined in the Order Form (Section 5), including a 10% discount on the annual service fees in return for paying the full year's costs within 15 days of the PSI invoice date.

PSI will need all completed documents to begin to process your order and to prepare for integration of your site's network(s) into PSINet. Should you have any questions, please do not hesitate to contact your Account Representative. We hope this simplifies the beginning of a very useful service and we look forward to supporting you in your use of the many services provided through PSINet.

Enclosures

LAN DIAL SM

Performance Systems International, Inc.
Post Office Box 592
Herndon, VA 22070
Phone: 1.800.82PSI82
+1 703.709.0300
Fax: +1 703.904.1207
Email: info@psi.com

LAN-DIAL REGISTRATION FORM

Date: _____ **Company:** _____

Technical/Operational Customer Contact:

Name: _____ Dept.: _____

Street: _____

P.O. Box: _____

Mail Stop: _____

City: _____ State: _____ Zip: _____

Telephone Number: ( ) _____

Fax Number: ( ) _____ Email Address: _____ Pager No.: _____

General Information:

Router Hardware (Examples: PC, NetBlazer™, SUN): _____

System Software Release: _____

Source of PPP Software: _____

Modem Manufacturer and Model (Examples: Telebit, UDS, Hayes, etc.): _____

Access Method:

☐ **Modem Dialup**

☐ **X.25 Access**

X.25 Provider: _____
(Examples: Telenet℠/Sprintnet℠, DataPAC℠, Transpac℠)

X.121 Address: _____

Network Number:
Does your organization have an official (A/B/C) network number assigned by the DDN NIC?

☐ No. (PSI will assign a Class C network number to you)

☐ Yes. (List all network numbers that need PSINet access below)[1]

	Network Number	Internet Access (Yes/No)
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____

Domain Name/Email/NEWS Configuration:
Does your organization have an official Domain Name? (Examples: **psi.com**, **rpi.edu**, etc.)

☐ Yes Assigned Domain Name: _____

☐ No Preferred Domain Name: _____

Alternate #1: _____

Alternate #2: _____

(PSI will request this for you in order)

Check One:

☐ I want vanilla SMTP.

☐ I want SMTP with PSI MX'ing to receive mail when we're not dialed up.

☐ I want UUCP/TCP Mail Delivery/Transmission.
If you want UUCP, give your computer's UUCP Name: _____

Do you want USENET/NEWS: ☐ Yes ☐ No

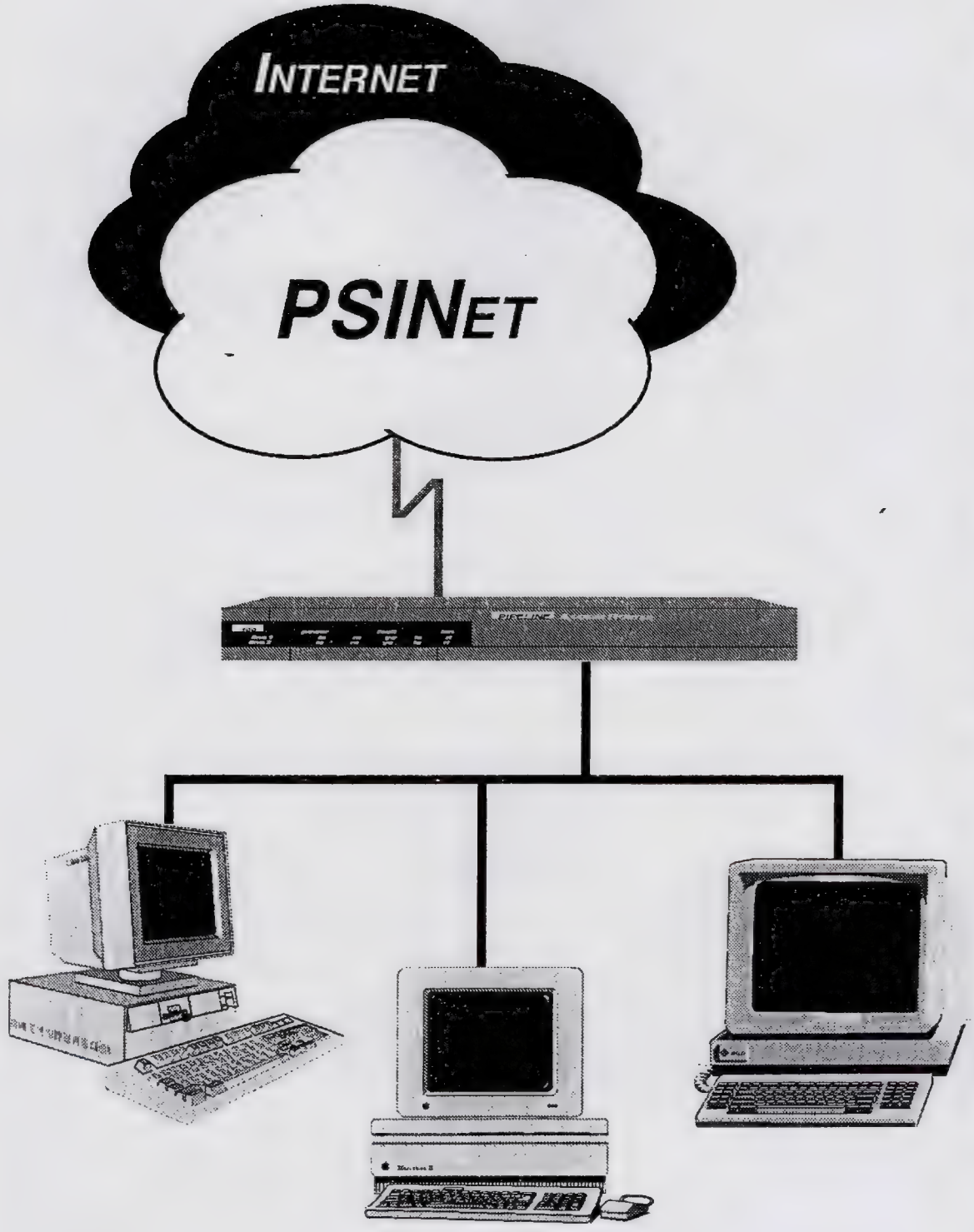
If "Yes", using NNTP or UUCP: ☐ NNTP ☐ UUCP

Which POP will be used for dialup (Examples: New York, Santa Clara, Reston, etc.) _____

[1]Each additional network number requires an additional one-time fee of $250.

NOTE:
If you have problems filling out this form, please contact your PSI Account Representative.

ISDN Access to the Internet



LAN-ISDN Service

INTERNET ACCESS

ISDN 64 KBPS ACCESS PLUS TCP/IP INTERNETWORKING

NATIONWIDE LOCAL ACCESS

PSI's LAN-ISDN Service

What is LAN-ISDN Service?

PSI s LAN-ISDN service provides "on-demand" digital ISDN (Integrated Services Digital Network) access at 64 Kbps into the nationally available PSINet® and global Internet using a standard ISDN line available from your local exchange carrier (LEC). Your entire local area network (LAN) of computer systems will then have Internet access.

LAN-ISDN is useful to organizations interested in entry level LAN integration into PSINet and the global Internet, without the complication and cost of leased lines and sometimes unpredictable installation by the phone company. Control and security is in the hands of the customer, as only you can make the "call" to internetwork or change the configuration of your site router.

In addition, LAN-ISDN includes documentation, support from PSI s Customer Support Group (CSG), and USENET/News.

Unlike other networks, there are no additional costs for connection time, quantity of packets, or international access. A fixed, inexpensive fee, which can be budgeted in advance of installation, is the standard for '90s Internet service.[1]

Why ISDN?

Integrated Services Digital Network, or ISDN, is the international standard for the telephony products of the future. Using digital technology from start to finish, ISDN promises reliability, performance and cost benefits to both the customer and telephone company.

Using ISDN, the customer can have integrated voice and data.

ISDN BRI

A BRI (Basic Rate Interface) link is what you will install in your home or office to support ISDN. Each BRI connection can support both a "B" channel for LAN-ISDN, as well as a "B" channel for voice.

PPP

LAN-ISDN service uses this state-of-the-art market and Internet standard to provide interoperability with two important vendor routers: Ascend Communications and SUN Microsystems. PSI will be working in early 1994 to qualify additional vendors.

Compatibility

Ascend's Pipeline Access Router™

Ascend Communications offers a family of reliable, inexpensive digital dialup routers called Pipeline Access Routers™. The routers support both ISDN and Internet Protocol (IP) routing over dedicated or dialup digital and analog circuits.

Ascend Communications's Pipeline 100™ model is fully compatible with LAN-ISDN and may be purchased directly from PSI or Ascend.

Sun Microsystems

Sun's ISDN PPP software for Sparc 10 and Sparc LX machines with "on board" ISDN hardware is compatible with LAN-ISDN.

Morning Star Technologies

In January of 1994, Morning Star's award-winning PPP software will be supporting several ISDN hardware platforms on Sparcstations running SUNOS.

PPP CERTIFIED

National Availability

PSINet is a national internetwork which uses the common networking language of TCP/IP to provide service to thousands of organizations throughout the U.S. and by direct attachment to the NSFNET, the Commercial Internet Exchange (CIX), and other international networks, to tens of thousands of other organizations throughout the globe: this is the global Internet.

Throughout the U.S., PSINet Points-of-Presence (POPs) have been deployed with new cities being added every month. These POPs are co-located in secure facilities leased from telephone companies and provide privacy, high reliability, direct access to fiber optic infrastructure, and professional on-site maintenance-- a unique and unmatched capability.

PSI s backbone is a redundant mesh of T3 and T1 circuits connected to PSI s ATM (Asynchronous Transfer Mode) switches and routers. No other Internet access service provider has the technical architecture and control that PSI has in providing Internet services.

Fast Delivery

A completed LAN-ISDN service Order Form, purchase order (accepted by fax) or PSI credit card validation form (if applicable) can have your connection available in five to seven business days if you have your BRI line already installed.

Network and Domain Registration and Support

PSI s network and domain registration and support cuts through the delays and errors when dealing with the various registration organizations.

[1] Your LEC may charge "message units" similar to your standard phone calls.

Highly reliable servers provide fault-tolerant support of your domain name and network routing.

Permanent IP Address

LAN-ISDN service provides the customer with a permanent network number, or IP address, which allows others on the Internet to ftp or telnet into their site.

USENET News Feed

LAN-ISDN service includes a full NEWS feed from UUPSI, one of the top 50 USENET sites, providing timely access to the largest distributed bulletin board service (BBS) in existence.

PSINet Service Guarantee

PSINet is a professionally run, extremely reliable network with contractual service guarantees on delivering the service. No other service provider will provide a guarantee.

Support and Service

PSI's Network Information and Support Center (NISC) provides 24 hours per day, 7 days per week support, and can be called, toll free, for any network operations problem. PSI also has an experienced Field Service team available for dispatch.

In addition, PSI provides unlimited phone and electronic mail consulting from the Customer Support Group (CSG) to integrate your facility into the Internet.

LAN-ISDN Service User's Manual

As part of customer support, an in-depth, detailed user manual is sent via two-day courier in the U.S. to all new LAN-ISDN service customers.

Hardware and Software Available Through PSI

For the customer's convenience, compatible router hardware and communications software for your PC and/or Macintosh may be purchased directly through PSI.

Due to the differences in interconnect between LECs, we encourage you to purchase your NT1 interface (similar to a modem) from the LEC or one of its local business partners.

Free Training and Tutorials

On a regular basis, PSI provides training through a free, three-day tutorial in various cities throughout the U.S. To find out when the next tutorial is scheduled, send e-mail to *tutorial-info@psi.com* and an automatic message will be generated.

Commercial Internet Exchange (CIX) Participation

Through the Commercial Internet Exchange (CIX), commercial internetworking providers are interconnected to provide an internet that is free of any restrictions on commercial usage. PSI is a co-founder of the CIX.

Future Capabilities of PSI's LAN-ISDN Service

In the future, PSI will support multiple "B" channel "dialup" with up to 512 Kbps "on-demand" bandwidth available.

Simple Leased Line Upgrade

For LAN-ISDN service customers who wish to upgrade to a leased line service, such as PSI's InterFrame™, the process is seamless and can be installed by PSI in a few weeks.

LAN-ISDN Pricing

Pricing for PSI's LAN-ISDN service is as follows:

LAN-ISDN:

One-Time Registration Fee:	$ 500
Monthly Service Fee:	$ 400

Special Promotion

If you sign up by March 31, 1994, your company can get a "Pioneer Preference" and will pay only $350 per month as long as you remain a PSI LAN-ISDN customer.

LAN-ISDN Overview

- "On-Demand" Internet ISDN Access
- LAN Access to the Internet
- ISDN 64 Kbps plus TCP/IP Internetworking
- Nationwide Local Access
- USENET News Feed Included

LAN-ISDN Service Cities



LEGEND

☎ LAN-ISDN CITY

LAN-ISDN Cities:

Atlanta, GA
Austin, TX
Baltimore, MD
Chicago, IL
Cincinnati, OH
Cleveland, OH
Columbus, OH
Dallas, TX
Detroit, MI
Dublin, OH
Herndon, VA
Houston, TX
Los Angeles, CA
New York, NY
Orlando, FL
Philadelphia, PA
Pittsburgh, PA
Portland, OR
Rochester, NY
San Francisco, CA
Santa Clara, CA
Seattle, WA
South Bend, IN
Sunnyvale, CA
Tampa, FL
Toledo, OH
Washington, DC

Note:

For the most-up-to-date list of cities that support LAN-ISDN services, send e-mail to *pop-info@psi.com*. An automatically generated response will be sent to your electronic mailbox.

For the most current list of local access phone numbers for LAN-ISDN services, send e-mail to *numbers-info@psi.com*. Again, an automatic response will be generated.

For Additional Information, Contact:

Performance Systems International, Inc.
510 Huntmar Park Drive
Herndon, VA 22070
Voice: +1 703.709.0300
Fax: +1 703.904.1207
FAXBACK INFO: 1 800.FAX.PSI.1
E-mail: *info@psi.com*

Inside Sales:
1 800.82psi82
(1 800.827.7482)

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PRELIMINARY

LAN-ISDN Order Form

LAN-ISDN ORDER FORM

DATE: _____ **COMPANY:** _____

CUSTOMER CONTACT:

Name: _____ Dept.: _____

Street: _____

P.O. Box: _____

Mail Stop: _____

City: _____ State: _____ Zip: _____

Telephone Number: ( ) _____ Fax Number: ( ) _____

E-mail Address: _____ Pager No.: _____

TECHNICAL/OPERATIONAL CUSTOMER CONTACT:

Name: _____ Dept.: _____

Street: _____

P.O. Box: _____

Mail Stop: _____

City: _____ State: _____ Zip: _____

Telephone Number: ( ) _____ Fax Number: ( ) _____

E-mail Address: _____ Pager No.: _____

GENERAL INFORMATION:

Router Hardware (Example: Ascend PIPELINE 100™): _____

System Software Release: _____

NT1 Manufacturer and Model: _____

NETWORK NUMBER:

Does your organization have an official (A/B/C) network number assigned by the DDN NIC?

☐ No. (PSI will assign a Class C network number to you)[1]

☐ Yes. (List all network numbers that need PSINet access below)[2]

[1]If you require a Class B network number, you must directly submit your request to the INTERNIC.
[2]Each additional network number requires an additional one-time fee of $250 to PSI.

PERFORMANCE SYSTEMS INTERNATIONAL, INC.
P. O. BOX 485 • HERNDON, VIRGINIA 22070
PHONE 1.800.82.PSI.82 (+1 703.709.0300) • FAX: +1 703.904.1207 • FAXBACK INFO: 1.800.FAX.PSI.1

such fees are payable to PSI either quarterly before the beginning of each quarter of LAN-ISDN, or Customer may pay the entire yearly amount within fifteen (15) days of the PSI invoice date which entitles the Customer to a 10% discount on yearly service fees.

The Customer may submit a purchase order for the first year's costs provided the purchase order meets PSI requirements. The actual purchase order must be submitted along with this signed Order Form. A purchase order number will not suffice. **The Customer purchase order must contain the following language, "Notwithstanding any provisions to the contrary on the face of this purchase order, attachments to this purchase order, or on the reverse side of this purchase order, this purchase order is being used for administrative purposes only, and this order is placed under and subject solely to the terms and conditions of the PSI LAN-ISDN Order Form executed between the Customer and PSI."**

6. No Warranties. Neither PSI nor its subcontractors warrant any connection to, transmission over, nor results or use of, any network connection or facilities provided (or failed to be provided) under this Agreement. The Customer is responsible for assessing its own computer and transmission network needs, and the results to be obtained therefrom.

7. Insurance. The parties shall each be responsible for assessing their own need for, and ability to maintain, property, casualty and liability insurance and shall obtain such insurance covering their risks as each sees fit. The parties agree not to make any claims against the other for any property loss (whether or not insured) and shall require their insurers, if any, to waive any right of subrogation against the others for any such loss

8. Limitation of Liability. Except for cases of gross negligence or willful misconduct, neither party shall be liable to the other for any loss, damage, liability, claim or expense rising out of or in relation to this Agreement or the provision of the service or equipment, however caused, whether grounded in contract, tort (including negligence) or theory of strict liability. The parties agree to work in good faith to implement the purposes of this Agreement, but recognize that the network connection and services to be provided by PSI could not be made available under these terms or other similar terms without a substantial increase in cost if the parties were to assume a greater degree of liability to each other.

9. Service Adjustments: If a PSI point-of-presence (POP) fails due to it's equipment or circuit(s) between PSI POP's failing (except in the case of fire, flood or other act of God), and this failure results in the disruption of the Customer's service, then the following adjustments will be made:

If after four hours PSI has not provided the Customer an alternative access point, PSI will provide additional service days to the Customer beyond the contract term for any calendar day or portion thereof of the service disruption. Only one additional service day can be granted per calendar day outage(s).

10. Term/Extension/Termination. This Agreement shall extend from the date first written below until one year from the Anniversary Date, and shall be subject to such extensions as the parties may agree. The Customer may opt for continuation of this service by issuing a new purchase order to commit the relevant fees for the additional year with quarterly or annual invoicing.

Service beyond this period will be subject to continued relevant fees and quarterly payments and the LAN-ISDN agreement in force at the Anniversary Date. Use as of that date will be considered acceptance of the new agreement. Failure to renew services after subsequent anniversaries of LAN-ISDN will not relieve Customer of its obligation to compensate PSI for such services rendered, prior to the date of termination provided to PSI in accordance with this Agreement, and are subject to relevant fees.

This Agreement may be terminated by the Customer or by PSI at any time upon thirty (30) days' prior written notice. Termination by the Customer shall not create the right to a refund of any fees previously paid or payable, except in the event PSI is unable to connect the Customer to PSINet®.

11. Notices. All notices given by any party or required under this agreement shall be in writing and addressed to the relevant part(y)(ies) as follows:

Performance Systems International, Inc.
Post Office Box 485
Herndon, VA 22070
Attn.: Martin L. Schoffstall

The Customer:

See 'Customer Contact' Information from Page 1

All notices shall be sent by posting in first class mail, postage prepaid, and shall be deemed as given five calendar days after posting.

12. Limitation of Access. This service is to cover network access by the Customer only to any organization, person, etc. through the PSI service, and does not extend to any other person, corporation or entity, including affiliates of the Customer, regardless of their relationship with the Customer. Customer includes all Customer staff and consultants paid by Customer while performing work for Customer.

As this is a fixed-price service, third party traffic, including packet access and electronic mail, sent from the Customer's facilities or received on behalf of the third party through the PSI service, is expressly forbidden under this Agreement. If USENET News is fed to another organization, no posting from that third party may be sent back through the Customer's connection to PSINet®.

Third party refers to separate non-Customer organizations or individuals using Customer's PSINet® connection for transfer of electronic data. It does not refer generally to organizations or individuals sending/receiving data to/from the Customer.

13. Access to Other Networks through PSINet®. Use of other networks may require approval of the respective network authorities and use will be subject to any acceptable usage policies such networks establish. Examples of such networks would be the NSFNET and ESNET. An example of an acceptable use policy can be found in Section C.

14. The Customer Services. All services to be provided by the Customer either in part or in total through PSINet® are appropriate subject to relevant Federal and State regulations. If these same services are offered through other networks, PSI accepts no responsibility for their authorization.

15. No Assignment. The Customer shall not sell, transfer, or assign this agreement without the prior written consent of PSI. Any act in derogation of the foregoing shall be null and void; provided, however, that any such assignment shall not relieve the Customer of its obligations under this Agreement.

16. Severability. If any provision of this Agreement is held by a court of competent jurisdiction to be contrary to law, the remaining provisions of this Agreement will remain in full force and effect.

17. Entire Agreement. This Agreement represents the complete agreement and understanding of the parties with respect to the subject matter herein, and supersedes any other agreement or understanding, written or oral. This Agreement may be modified only by a writing signed by all parties.

In witness whereof, the parties have entered into this agreement as of the date set forth:

_____

PSI Corporate Officer (please type or print)

_____

PSI Corporate Officer Signature Date

_____

Customer Representative (please type or print)

_____

Customer Signature Date

	Network Number	Internet Access (Yes/No)
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____

DOMAIN NAME/E-MAIL/NEWS CONFIGURATION:

Does your organization have an official Domain Name? (Examples: **psi.com**, **rpi.edu**, etc.)

☐ Yes Assigned Domain Name: _____

☐ No Preferred Domain Name: _____

Alternate #1: _____

Alternate #2: _____

(PSI will request this for you in order)

Check One:

☐ I want vanilla SMTP.

☐ I want SMTP with PSI MX'ing to receive mail when we're not dialed up.

Do you want USENET News:[3] ☐ Yes ☐ No

Which PSI POP will be used for dialup (Examples: Santa Clara, Herndon, Chicago, etc.)[4] _____

[3] You must use the NNTP protocol to get USENET News.
[4] See pop-info@psi.com for the list; only those supporting LAN-ISDN are applicable.

LAN-ISDN SERVICE TERMS & CONDITIONS

This Agreement, by and between Performance Systems International, Inc., duly authorized and existing under the laws of the State of New York with its main office at 510 Huntmar Park Drive, Herndon, Virginia 22070 ("PSI"); and the Customer (as above) for the provision by PSI or its subcontractors of certain computer network services, for the use by the Customer.

1. Network Usage. PSINet® access shall be offered to the Customer in accordance with the criteria set by PSI which shall be appended hereto as Attachment A. The Customer shall be responsible for user/access security and network access. PSI provides no user access security with respect to any the Customer facilities or facilities of others. PSI will assist in network security breach detection or identification, but shall not be liable for any inability, failure or mistake in doing so.

2. LAN-ISDN Use. No more than one LAN-ISDN connection can be used at any time with a LAN-ISDN account as paid for by the customer and assigned by PSI. If two individuals or groups need to simultaneously access PSINet® through separate phone lines, then they would have to acquire two LAN-ISDN accounts, and so on. A LAN-ISDN session is defined as a connection with a PSI modem or access device using the public switched telephone system.

3. PSI Technical Instruction and Information. PSI shall provide to the Customer, in accordance with the extant PSI policies, technical consultation and instruction regarding network hardware, software, access techniques and commands. In addition, PSI shall provide access by the Customer to copies of all its regular published reports concerning network usage, and shall offer the Customer access to relevant technical meetings and tutorials. PSI is not responsible to the Customer for the cost or expense of administrative, technical, emergency and support personnel at the Customer's location necessary for dealing with PSI and for providing and maintaining the Customer's own computer equipment, and PSI or other network access.

4. Service Commencement and Anniversary Date. Service Commencement" refers to the fact that PSI begins immediately upon receipt of the executed Agreement and the Customer's purchase order to provide services such as registration, training and consultation. "Anniversary Date" refers to the day in which packets of data can be sent to the Customer's site from PSINet. Notwithstanding the above, the Anniversary Date shall be no later than 60 days from the Service Commencement date. After 90 days, Customer may terminate this service for inactivity with no penalty beyond the amount of the initial registration fee.

5. LAN-ISDN Service Fee. The Customer desires a LAN-ISDN service connection to PSINet®. For this service, the Customer shall commit to PSI through its purchase order and pay to PSI a one-time start-up fee of $500.00 for each service ordered and $1,200.00 per each quarter of service for each service ordered. The registration fee is non-refundable, and the quarterly service fees are independent of the amount of traffic or system access by users at the Customer's location.

Service Commencement is initiated on the basis of the receipt of this executed Agreement and such purchase order to pay to PSI the one-time start-up fee and quarterly service fees. Quarterly service fees shall be invoiced by PSI and

ATTACHMENT A

PSI, Inc.
ACCEPTABLE USE POLICY

These statements represent a guide to the acceptable use of PSI facilities.

PSI, Inc. recognizes as acceptable all forms of data communications across its network, except where Federally subsidized facilities of transport (such as national backbones like NSFNET) may require limitations, or State/Federal/International law prohibits. In those cases, use of the network should adhere to the general principle of advancing science and education through interexchange of information among research and educational institutions except where specific policy statements exist (see example, Attachment C).

In cases where data communications are addressed to recipients outside of the PSI supplied network and are carried over other regional networks or the Internet, PSI users are advised that acceptable use policies of those other networks apply and may, in fact, limit use.

If PSI is informed by Federal/State/International authorities of inappropriate or illegal use of PSI facilities and/or other networks these determinations will be binding on the Customer.

ATTACHMENT B

PSI NETWORK DOCUMENTATION

"LAN-ISDN Service" Product Sheet

ATTACHMENT C

NSFNET Backbone Service
ACCEPTABLE USE POLICY

GENERAL PRINCIPAL:

(1) NSFNET Backbone services are provided to support open research and education in and among US research and instructional institutions, plus research arms of for-profit firms when engaged in open scholarly communication and research. Use for other purposes is not acceptable.

SPECIFICALLY ACCEPTABLE USES:

(2) Communication with foreign researchers and educators in connection with research or instruction, as long as any network that the foreign user employs for such communication provides reciprocal access to US researchers and educators.

(3) Communication and exchange for professional development, to maintain currency, or to debate issues in a field or subfield of knowledge.

(4) Use for disciplinary-society, university-association, government-advisory, or standards activities related to the user's research and instructional activities.

(5) Use in applying for or administering grants or contracts for research or instruction, but not for other fund-raising or public relations activities.

(6) Any other administrative communications or activities in direct support of research and instruction.

(7) Announcements of new products or services for use in research or instruction, but not advertising of any kind.

(8) Any traffic originating from a network of another member agency of the Federal Networking Council if the traffic meets the acceptable use policy of that agency.

(9) Communication incidental to otherwise acceptable use, except for illegal or specifically unacceptable use.

UNACCEPTABLE USES:

(10) Use for for-profit activities (consulting for pay, sales or administration of campus stores, sale of tickets to sports events, and so on) or use by for-profit institutions unless covered by the General Principle or as a specifically acceptable use.

(11) Extensive use for private or personal business. This statement applies to use of the NSFNET Backbone only. NSF expects that connecting networks will formulate their own use policies. The NSF Division of Networking and Communications Research and Infrastructure will resolve any questions about this Policy or its interpretation.

NOTE: If you have problems filling out this form, please contact your PSI Sales Account Executive.

ISDN Internet Access

Subscribe to PSI's

LAN-ISDN Service for One Year and Receive a FREE LAN-ISDN Compatible Ascend Router.*

for more information...

Call 1.800.82psi82

Limited time offer good through September 30, 1994, or while supplies last.

*Payment in advance of one-time registration fee and one full year of service is required before free hardware will be shipped to customer.
Limit: Up to 5 sites per customer under this special offer.
This special offer is not valid in conjunction with any other PSI promotion, except the "LAN-ISDN Pioneer Preference" promotion on orders accrued by March 31, 1994.
Other restrictions apply. Contact your PSI sales representative for details.*

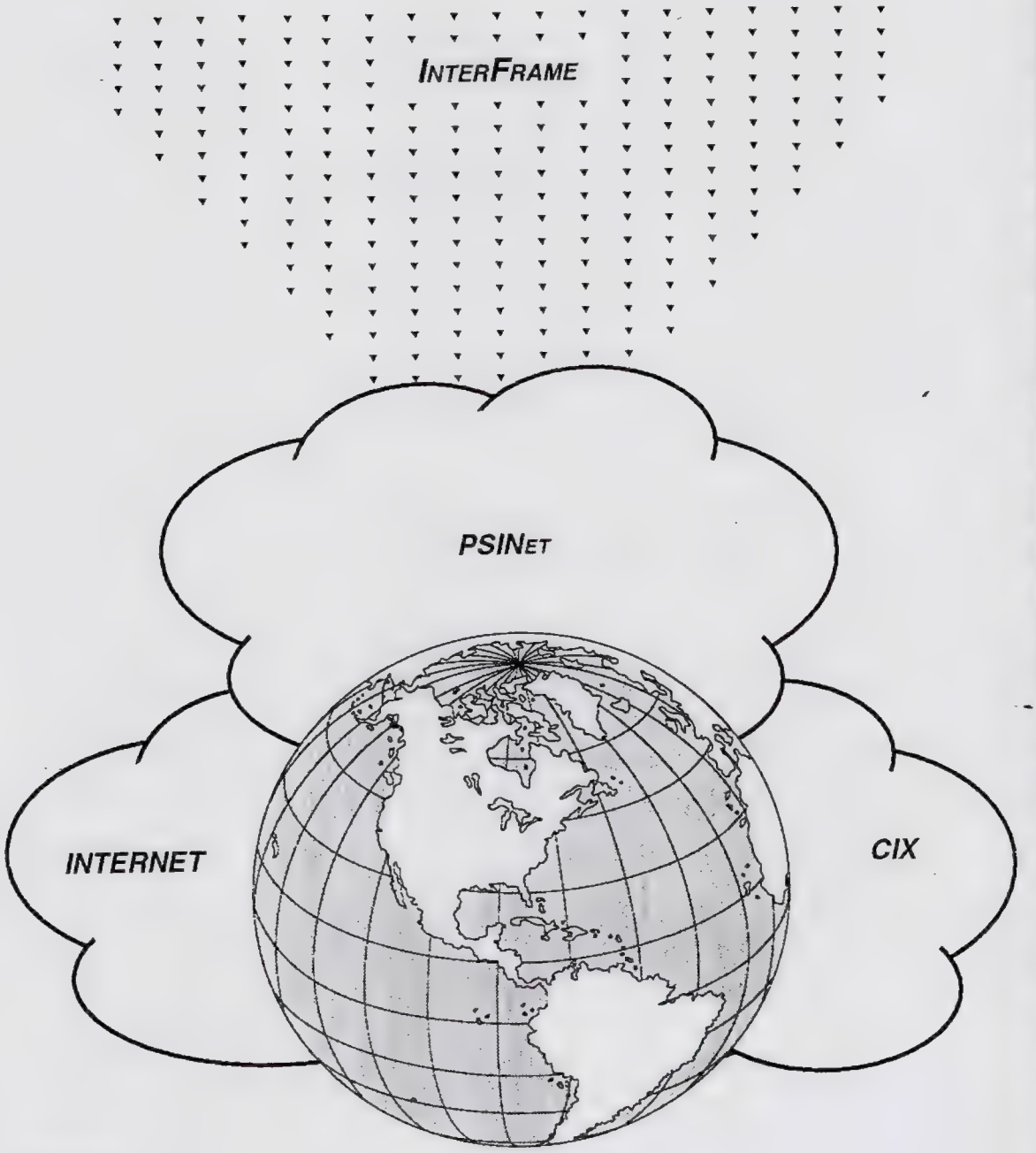
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FRAME RELAY ACCESS TO THE INTERNET

INTERFRAME: PROVEN INTERNETWORKING VALUE AND THE LATEST ADVANTAGES OF FRAME RELAY



InterFrame℠

- INTERNET ACCESS
- TCP/IP
- SNMP NETWORK MANAGEMENT
- SCALABILITY
- DIALUPS
- STATISTICS
- CONSULTING

PSI

▾ UNMATCHED PERFORMANCE
▾ IMPLEMENTING TODAY FOR TOMORROW'S APPLICATIONS

PSI's InterFrame Service

What is InterFrame?

InterFrame℠ is the next generation wide area internetwork service that gives your LAN or host access to the global Internet, using state-of-the-art Frame Relay technology to access the power of the TCP/IP Internet.

InterFrame service provides LAN integration of an organization's computers (from PCs to mainframes) into the nationally available PSINet® and global Internet using Frame Relay technology. Over 2,000 organizations currently participate in PSINet, the premier provider of internetworking services in the U.S.

The InterFrame service provides dedicated 56, 128, 256, 384 and 512 Kbps, as well as T1 access to the Internet in three styles: ***"Standard", "Classic"*** and ***"Basic"***, with several options that can be added including dialups for terminal devices. PSI provides local access/loop ordering, network management, and 24 hours per day operations. Extensive customer support services including support in integrating PCs, MACs, and UNIX systems is provided to Classic customers.

PSI's InterFrame service is built on PSI's new multi-tier backbone which integrates cell-based switching, Frame Relay link level access, and state-of-the-art router technology.

InterFrame is the solution for interorganizational communications in the 90s.

InterFrame Advantages

InterFrame provides several unique capabilities not found in traditional service products providing router based networks such as:

- Statistical guarantees on per port backbone usage even during burst loads - no longer can a single file transfer (FTP) session consume all or the majority of packet switching resources
- Security/privacy through link level control of which "port" you can communicate with, in addition to traditional layer 3 control (IP filtering)
- Support of efficient multicast methods - increasingly important for packet video and packet voice communications
- Separation of IO requirements from Global IP routing
- Support for multiple protocols as well as multiple virtual IP networks on the same infrastructure

With these capabilities, and future ones described elsewhere within this document, this superior service technology will give your organization the performance and flexibility you need today as well as the future. Don't invest in a dead-end solution -- use InterFrame.

CISCO ROUTER COMPATIBLE

Network Management

PSI will provide all aspects of managing the process of getting your local access installed, from telephone companies to full router integration.

PSI's 24 hour Operations Center will monitor all aspects of your service, including the router or host that you connect, with SNMP. On-line statistics of your daily, weekly, and monthly use is automatically made available. Our pro-active operations group will keep things running smoothly whether you are present or not.

Applications

InterFrame handles high-speed data traffic efficiently with extremely low network delay. It is particularly well suited for any application which is 'bursty' and requires rapid responses.

The interorganizational LAN-to-LAN connectivity that InterFrame supports are applications such as:

- Image and graphic transmission
- Real-time file/record updates and transfers
- Distributed processing (for instance use of remote applications)
- Database access
- Electronic mail, especially multimedia electronic mail (MIME and X.400/TCP)
- Document Sharing

If your organization has or is deploying power to the desktop, you are an ideal candidate for InterFrame. This is especially true if your company is geographically distributed and/or works with other organizations that are geographically distributed.

Integration with Other PSI Services

Not only does InterFrame fully integrate with PSI's T1 services SCS and CCS, but also with dialup TCP/IP services such as LAN-DIAL and HOST-DIAL. Additionally, InterFrame integrates with PSILink for national wireless e-mail access.

Integration with RBOC/LEC/CAP Frame Relay Services

PSI is in the process of connecting to the Regional Bell Operating Companies (RBOCs), as well as Competitive Access Providers (CAPs), to provide local access through their installed Frame Relay (FR) networks as they are

deployed in 1993. These FR networks will have limited deployment in major metropolitan areas in the US.

PSI is currently connected to New York Telephone's Frame Relay service in the metro New York LATA, ICI's Frame Relay service in Florida, and PacNet's Frame Relay service in the Pacific Northwest.

What Your Site Will Need

Your organization will need a host or router that supports IP Frame Relay and is compliant with RFC 1294. You will also need a standard DSU/CSU. Major router vendors including Cisco, Wellfleet and ACC, all support these standards.

Your equipment will be connected to one of PSI's Points-of-Presence (POPs) in one of 80 U.S. cities.

InterFrame Options

- Individual Dialup Service (IDS)

  Unlimited low speed dialup access is available through PSI s Individual Dialup Service (IDS) in major U.S. cities. This service provides 1200-2400 baud ***telnet and rlogin*** access back to your host machines. Telnet works with almost any system and is an Internet standard protocol.

  IDS is equivalent to X.25 s "PAD" capabilities.

- USENET Access Using NNTP (Network News Transfer Protocol)

  You can subscribe to USENET News, the largest distributed bulletin board system (BBS) in existence, with over 50 megabytes per day of information posted world wide. It is a forum for groups to conduct dialogues on a myriad of subjects ranging from law and sociology to communications, computing, biology and medical techniques and sports.

  Approximately 1.5 million people from all over the world participate in USENET. It is an effective way to post information and read about new findings, products and services, as well as a way to participate in conversations within special interest groups or wider audience.

- Additional Private Virtual Circuits (PVCs)
- Guaranteed bandwidth between ports on the Frame Relay network (i.e., Committed Information Rates, CIRs)
- Security filtering and encryption for InterFrame *"Standard"* service customers

Compatibility

Compatible Routers and Hosts

PSI's InterFrame service is compatible with major vendors such as Cisco Systems, Wellfleet, SUNConnect FR, Cabletron, Livingston, Morning Star Technologies and more.

Standards Compatible

InterFrame is compatible with all pertinent technical specifications including the ANSI T1.606 Standard, the CCITT I.122 Standard, and the vendor specification "Frame Relay Specification with Extensions" - Document No. 001-208966 Rev. 1, now the custody of the Frame Relay Forum, and most recently the Internet Standard RFC 1294 for encapsulation of TCP/IP over Frame Relay.

These published open standards have allowed router vendors to put into effect compatible interoperable implementations of Frame Relay so that they can work with the InterFrame service. Contact your router vendor concerning their support of RFC 1294.

Future InterFrame Capabilities

Invest in an internetworking service that can grow as your needs grow. Below are some capabilities which will be available with InterFrame in the near future:

- Support for packet multicast audio and video conferencing

Customer Support

For *"Standard"* and *"Classic"* customers, unlimited telephone and electronic mail support from our professional staff is included. PC, MAC and UNIX integration, including application protocols like telnet, ftp, and NNTP, are supported. Our staff will work to make sure your LAN based applications benefit from the power of internetworking.

Pricing

InterFrame service is competitively priced for your applications starting at less than $600 per month.

InterFrame Overview

- ***Internet Access***
- ***56, 128, 256, 384, 512 Kbps and T1 Link Speeds***
- ***Standard Off-the-Shelf Hardware and Software***
- ***Router or Host Connect***
- ***Flexibility for Future Service Needs***

InterFrame Service Features

InterFrame Standard Service

InterFrame Standard service is PSI's premier product for Frame Relay access to the Internet. The Standard service includes PSI- supplied customer premise equipment as well as a host of value-added capabilities from consulting to participation in a user's group.

InterFrame Standard service includes:

- Frame Relay Router and DSU/CSU installed at the customer site and maintained by PSI
- Domain and network number registration
- Telephone circuit order, installation and ongoing maintenance
- Domain name service, primary and secondary
- 1-800 Network Operations Center (NOC) support 24 hours per day, 7 days per week
- A Customer Support Group available via electronic mail and telephone consulting
- Unlimited consulting in areas like:
  - UNIX network/systems integration
  - Macintosh and PC network/systems integration
  - sendmail.cf configuration
  - CNews/NNTP
  - General Internet integration
- Direct SNMP access to PSINet
- Membership in a six year old user's group which meets regularly
- Usage statistics of the customer's connection
- Free tutorials and training
- Contractual service guarantee
- Dialup backup during circuit failures
- Redundant and reliable national WAN infrastructure
- Multiple/redundant suppliers (hardware and circuits)
- Commercial provider/commercial applications and traffic
- Commercial Internet Exchange (CIX) access

InterFrame Classic Service

InterFrame Classic includes a host of value-added capabilities from consulting to participation in a user's group.

InterFrame Classic service includes:

- Domain and network number registration
- Telephone circuit order, installation and ongoing maintenance
- Domain name service, primary and secondary
- 1-800 Network Operations Center (NOC) support 24 hours, 7 days per week
- A Customer Support Group available via electronic mail and telephone consulting
- Unlimited consulting in areas like:
  - UNIX network/systems integration
  - Macintosh and PC network/systems integration
  - sendmail.cf configuration
  - CNews/NNTP
  - General Internet integration
- Direct SNMP access to PSINet
- Membership in a six year old user's group which meets regularly
- Usage statistics of the customer's connection
- Free tutorials and training
- Contractual service guarantee
- Dialup backup during circuit failures
- Redundant and reliable national WAN infrastructure
- Multiple/redundant suppliers (hardware and circuits)
- Commercial provider/commercial applications and traffic
- Commercial Internet Exchange (CIX) access

RFC 1294 CERTIFIED

InterFrame Basic Service

Like InterFrame Standard and Classic, InterFrame Basic uses Frame Relay technology for Internet access. It is intended for the organization with significant experience with the Internet and TCP/IP protocols and applications.

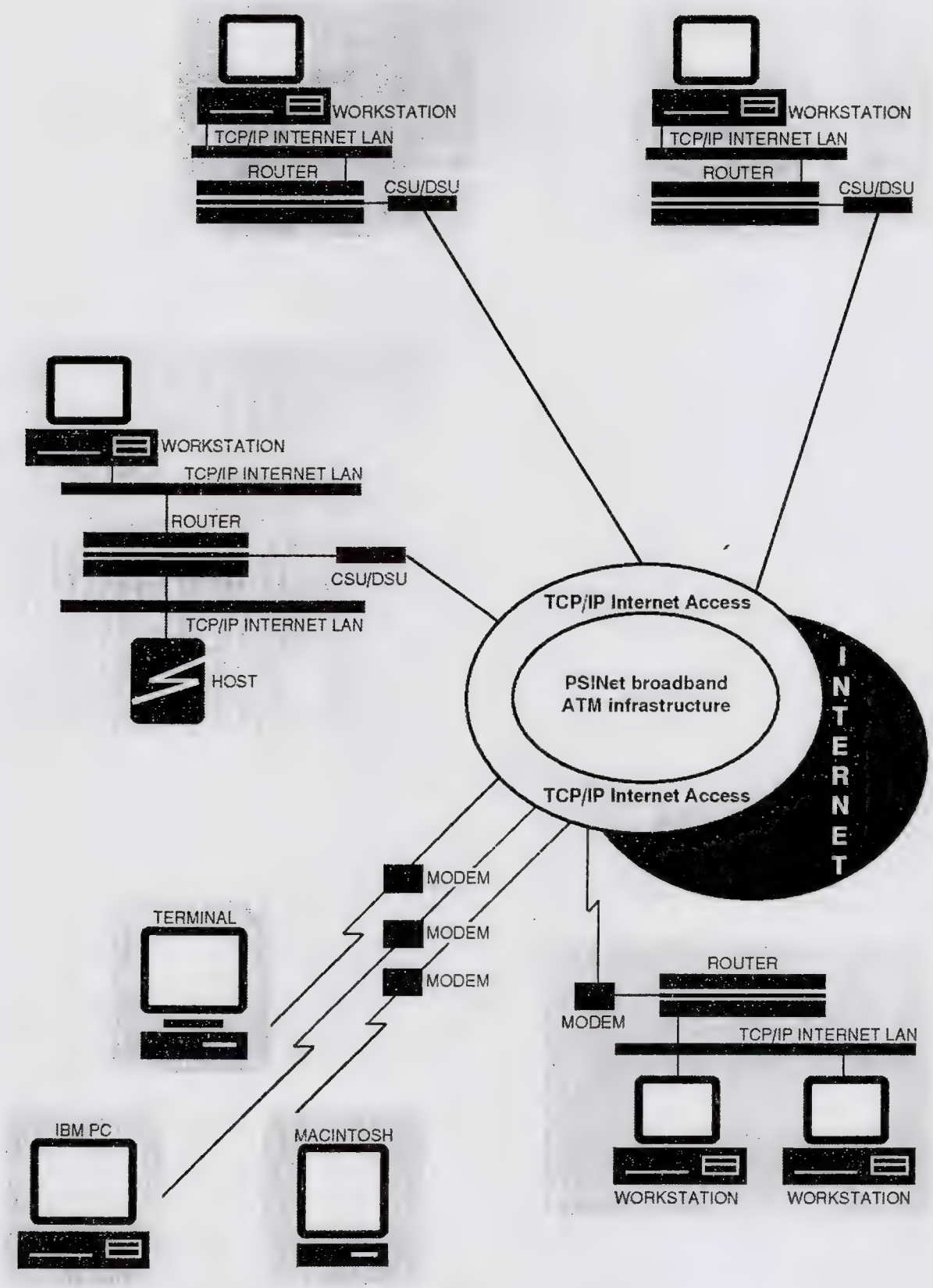
InterFrame Basic service includes:

- Domain and network number registration
- Telephone circuit order, installation and ongoing maintenance
- 1-800 NOC support 24 hours per day, 7 days per week
- Usage statistics of the customer's connection
- Redundant and reliable national WAN infrastructure
- Multiple/redundant suppliers (hardware and circuits)
- Commercial provider/commercial applications and traffic
- Commercial Internet Exchange (CIX) access

InterFrame Service Options

All of PSI's InterFrame products are available with the following additional service options:

- Unlimited low speed dialup access through IDS in major U.S. cities at 1200-2400 baud
- USENET access using NNTP
  - Additional 8K PVC (no CIR)
  - Additional 8K PVC (with CIR)
  - Security Filtering (*Standard* only)
  - Security Encryption (*Standard* only)


WORKSTATION
TCP/IP INTERNET LAN
ROUTER
CSU/DSU
WORKSTATION
TCP/IP INTERNET LAN
ROUTER
CSU/DSU
WORKSTATION
TCP/IP INTERNET LAN
ROUTER
CSU/DSU
TCP/IP INTERNET LAN
HOST
TCP/IP Internet Access
PSINet broadband
ATM infrastructure
TCP/IP Internet Access
INTERNET
MODEM
MODEM
MODEM
TERMINAL
ROUTER
MODEM
TCP/IP INTERNET LAN
IBM PC
MACINTOSH
WORKSTATION
WORKSTATION
KEY:
Leased Line
Dialup Line

InterFrame℠ Cities

Frame Relay Access to the Internet



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InterFrame Cities



InterFrame 56

Akron, OH
Albany, NY
Ann Arbor, MI
Atlanta, GA
Augusta, GA
Austin, TX
Baltimore, MD
Baton Rouge, LA
Beaumont, TX
Boise, ID
Boston, MA
Buffalo, NY
Cedar Rapids, IA
Chattanooga, TN
Chicago, IL
Cincinnati, OH
Cleveland, OH
Columbia, MO
Columbia, SC
Columbus, OH
Dallas, TX
Davenport, IA
Denver, CO
Des Moines, IA
Detroit, MI
Dublin, OH
Eugene, OR
Evansville, IN
Fort Lauderdale, FL
Fort Wayne, IN
Hartford, CT
Hermiston, OR
Herndon, VA
Houston, TX
Indianapolis, IN
Iowa City, IA
Jacksonville, FL
Joplin, MO
Kansas City, MO
Las Vegas, NV
Longview, TX
Los Angeles, CA
Miami, FL
Minneapolis, MN
Mobile, AL
Montgomery, AL
Nashville, TN
Newark, NJ
New Orleans, LA
New York, NY
Oklahoma City, OK
Olympia, WA
Omaha, NE
Orlando, FL
Philadelphia, PA
Phoenix, AZ
Pittsburgh, PA
Portland, OR
Raleigh, NC
Richmond, VA
Rochester, NY
Salem, OR
Salt Lake City, UT
San Francisco, CA
Santa Clara, CA
Savannah, GA
Seattle, WA
Shreveport, LA
South Bend, IN
Spokane, WA
Springfield, MA
Stamford, CT
St. Louis, MO
Syracuse, NY
Tampa, FL
Toledo, OH
Topeka, KS
Trenton, NJ
Tri-Cities, WA
Tulsa, OK
Washington, DC
West Palm Beach, FL
White Plains, NY
Wichita, KS
Yakima, WA

InterFrame 128, 256, 384, 512, and T1

Akron, OH
Albany, NY
Ann Arbor, MI
Atlanta, GA
Austin, TX
Baltimore, MD
Boise, ID
Boston, MA
Buffalo, NY
Chicago, IL
Cincinnati, OH
Cleveland, OH
Columbus, OH
Dallas, TX
Dayton, OH
Denver, CO
Detroit, MI
Dublin, OH
Fort Wayne, IN
Herndon, VA
Houston, TX
Indianapolis, IN
Los Angeles, CA
Miami, FL
Newark, NJ
New York, NY
Olympia, WA
Orlando, FL
Philadelphia, PA
Phoenix, AZ
Pittsburgh, PA
Portland, OR
Rochester, NY
San Francisco, CA
Santa Clara, CA
Seattle, WA
South Bend, IN
Syracuse, NY
Tampa, FL
Toledo, OH
Washington, DC
White Plains, NY
Youngstown, OH

PSINet, the Network

PSI is the premier provider of internetworking services in the U.S. today. Over 3,000 organizations currently participate in the global Internet through PSI's network, PSINet®.

PSINet is a reliable, high performance wide area network (WAN) system. Its combination of hardware, software and communications facilities represents a substantial deployment of components integrated, fielded and managed to offer unparalleled networking services.

PSINet uses common networking languages (such as TCP/IP), as well as state-of-the-art Frame Relay technology, which support ATM, batch style and interactive network services. Services include electronic mail, USENET news, remote terminal access, file transfer, bulletin board, security and directory services.

PSINet includes about 15% of the U.S. portion of the global Internet. This collection of networks called the Internet represents:

- About one-half Commercial and one-half Research and Education Networks
- Over 25,000 Organizations
- Over 2 Million Daily Users
- The U.S. and Over 75 Other Countries
- Over 25 Million E-mail Users

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PSI's InterFrame Service is Available in these U.S. Cities:

Akron, OH
Albany, NY
Ann Arbor, MI
Atlanta, GA
Augusta, GA
Austin, TX
Baltimore, MD
Baton Rouge, LA
Beaumont, TX
Boise, ID
Boston, MA
Buffalo, NY
Cedar Rapids, IA
Chattanooga, TN
Chicago, IL
Cleveland, OH
Columbia, MO
Columbia, SC
Columbus, OH
Dallas, TX
Davenport, IA
Dayton, OH
Denver, CO
Des Moines, IA
Detroit, MI
Dublin, OH
Eugene, OR
Evansville, IN
Fort Lauderdale, FL
Hartford, CT
Hermiston, OR
Herndon, VA
Houston, TX
Indianapolis, IN
Iowa City, IA
Jacksonville, FL
Joplin, MO
Kansas City, MO
Las Vegas, NV
Longview, TX
Los Angeles, CA
Miami, FL
Minneapolis, MN
Mobile, AL
Montgomery, AL
Nashville, TN
Newark, NJ
New Orleans, LA
New York, NY
Oklahoma City, OK
Olympia, WA
Omaha, NE
Orlando, FL
Philadelphia, PA
Phoenix, AZ
Pittsburgh, PA
Portland, OR
Raleigh, NC
Richmond, VA
Rochester, NY
Salem, OR
Salt Lake City, UT
San Francisco, CA
Santa Clara, CA
Savannah, GA
Seattle, WA
Shreveport, LA
South Bend, IN
Spokane, WA
Springfield, MA
Stamford, CT
St. Louis, MO
Syracuse, NY
Tampa, FL
Toledo, OH
Topeka, KS
Trenton, NJ
Tri Cities. WA
Tulsa, OK
Washington, DC
West Palm Beach, FL
White Plains, NY
Wichita, KS
Yakima, WA
Youngstown, OH

InterFrame℠ Cities

For Additional Information, Contact:

1.800.82psi82
(1.800.827.7482)

Performance Systems International, Inc.
510 Huntmar Park Drive
Herndon, VA 22070
Voice: +1 703.709.0300
FAX BACK INFO: 1 800.FAX.PSI1
E-Mail: *info@psi.com*



InterFrame℠ Price List

InterFrame Services

InterFrame Basic*†

Speed	Monthly Service Fee
56 Kbps	$ 400
128 Kbps	1,000
256 Kbps	1,200
384 Kbps	1,400
512 Kbps	1,700
T1	2,700

InterFrame Classic*†

Speed	Monthly Service Fee
56 Kbps	$ 800
128 Kbps	1,300
256 Kbps	1,500
384 Kbps	1,700
512 Kbps	2,000
T1	3,000

InterFrame Standard*†

Speed	Monthly Service Fee
56 Kbps	$1,200
128 Kbps	1,700
256 Kbps	1,900
384 Kbps	2,100
512 Kbps	2,400
T1	3,400

InterFrame One-Time Set-Up Fees

Service	One-Time Fee
Basic 56	$ 600
Basic 128, 256, 384, 512, T1	2,000
Classic 56	1,000
Classic 128, 256, 384, 512, T1	2,400
Standard 56	1,800
Standard 128, 256, 384, 512, T1	2,900

InterFrame Options

Option	Monthly Fee
USENET/NNTP	$ 95
Individual Dialup Service (IDS)	700
PVC per 8K (no CIR)▲	10
PVC per 8K (with CIR)▲	35
Security Filtering (*Standard* only)	400
Security Encryption (*Standard* only)	400

* Plus local access fees.
† Discount available with term commitment.
▲ Further details on configuration and pricing for additional PVCs are available from your account representative.

For Additional Information, Contact:

Inside Sales:
1.800.82psi82
(1.800.827.7482)

Performance Systems International, Inc.
510 Huntmar Park Drive
Herndon, VA 20070
Voice: +1 703.709.0300
FAX BACK INFO: 1 800.FAX.PSI1
E-Mail: *info@psi.com*

InterFrame℠

· BASIC
· CLASSIC
· STANDARD

FOR PSI USE ONLY:
TYPE OF SERVICE: _____
DATE REC'D.: _____
POP: _____
ORDER #: _____
ACCOUNT ID: _____
CONNECTED TO: _____

INTERFRAME SERVICE ORDER FORM

CUSTOMER INFORMATION:

Name: _____

Address: _____

_____

City: _____ State: _____ Zip Code: _____

Phone: ____/_____ FAX: ____/_____

PSI INTERFRAME SERVICE SUBSCRIPTION DETAILS:

INITIAL THE SERVICE YOU REQUIRE BELOW:

BASIC Service:

_____56 Kbps _____128 Kbps _____256 Kbps _____384 Kbps _____512 Kbps _____T1

CLASSIC Service:

_____56 Kbps _____128 Kbps _____256 Kbps _____384 Kbps _____512 Kbps _____T1

STANDARD Service:

_____56 Kbps _____128 Kbps _____256 Kbps _____384 Kbps _____512 Kbps _____T1

INTERFRAME OPTIONS REQUIRED:

INITIAL THE OPTION(S) YOU REQUIRE BELOW:

_____USENET/NNTP at $95 per Month.

_____INDIVIDUAL DIALUP SERVICE (IDS) at $700 per Month. [one IP network number only]

_____SECURITY FILTER [STANDARD ONLY] at $400 per Month.

_____SECURITY ENCRYPTION [STANDARD ONLY] at $400 per Month.

NOTE: Ordering of additional PVCs is done through the InterFrame Work Order Form.

INTERFRAME SERVICE TERM COMMITMENT:

INITIAL THE SERVICE TERM YOU REQUIRE BELOW:

_____ 3 MONTHS _____ 6 MONTHS _____ ONE-YEAR (5% DISCOUNT) _____ TWO-YEARS (10% DISCOUNT)

INTERFRAME SERVICE SITE LOCATION:

Address: _____

City: _____ State: _____ Zip Code: _____

CUSTOMER ADMINISTRATIVE/LEGAL/CONTRACT REPRESENTATIVE [1]:

Name: _____

Title: _____

Department: _____

Phone: ____/_____ FAX: ____/_____ E-Mail Address: _____

[1] THIS REPRESENTATIVE WILL BE ADDED TO THE PSITECH USER'S GROUP MAILINGS.

PERFORMANCE SYSTEMS INTERNATIONAL, INC.
P. O. Box 485, HERNDON, VIRGINIA 22070
PHONE: +1.703.709.0300 · 1.800.82psi82 · FAX: +1.703.904.1207 · FAX BACK INFO: 1.800.FAX.PSI1 · E-MAIL: info@psi.com

INTERFRAME SERVICE SITE SURVEY

This section must be completely filled out to connect your organization to PSINet.

1. TECHNICAL REPRESENTATIVE [1]

Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone: ____/____ FAX: ____/____ E-Mail Address: _____

Pager No.: _____

2. 24 HOUR/DAY OPERATIONAL CONTACT

Name: _____

Address: _____ Phone: ____/____

FAX: ____/____ E-Mail: _____ Pager No: _____

3. NETWORK NUMBER

Does your organization have an official (A/B/C) network number assigned by the DDN NIC at SRI?

☐ No. (PSI will assign a Class C network number to you)

☐ Yes. (List all network numbers that need PSINet access below)

Network Number	Internet Access (Yes/No)	Network Number	Internet Access (Yes/No)
1. _____	_____	3. _____	_____
2. _____	_____	4. _____	_____

4. DOMAIN NAME

Does your organization have a currently assigned official Domain Name from the Internet NIC? (Examples: psi.com, rpi.edu, etc.)

☐ Yes. Assigned Domain Name: _____ ☐ No. Preferred Domain Name: _____

(NOTE: PSI will contact you by phone to confirm this selection , due to naming constraints imposed by the Internet NIC).

Alternate #1: _____

Alternate #2: _____

5. CUSTOMER ROUTER OR HOST [2]

Vendor: _____

Model: _____ Software Rev.: _____

Do you want PSI to monitor this router with SNMP? ☐ YES ☐ NO

(If 'YES', you will be required to update the Community Name to PSI's monthly distributed Community Name. Publicly available statistics will be published about this router).

6. USENET NNTP CONFIGURATION

Size of PVC bandwidth for NNTP feed: [3]

☐ 8K ☐ 16K ☐ 24K

☐ 32K ☐ 48K ☐ 56K ☐ 64K

[1] THIS REPRESENTATIVE WILL BE ADDED TO THE PSITECH USER'S GROUP MAILINGS.

[2] THIS ROUTER OR HOST MUST BE PSI-CERTIFIED FOR INTERFRAME AS DESCRIBED IN THE INTERFRAME TERMS AND CONDITIONS.

[3] NOTE: INTERFRAME 56 CUSTOMERS SHOULD SELECT 8K-24K; ALL OTHERS SHOULD SELECT 64K.

Please list your computer's UUCP Name (if available): _____

Please list the Internet address of the computer system: _____

7. Circuit Demarc Location

Where will the circuit demarc be located?

Site Contact: _____ Telephone Number: ___/___

Building Name: _____ Room Number: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Note: It is strongly recommended that the TELCO demarc and router be within 15 feet of each other. The customer is responsible for any extension (including installation, maintenance and all costs) of circuits from the demarc to the PSI node if they are more than 15 feet apart. T1 circuits do not function if extended beyond the TELCO demarc.

8. Organizational Description

Please provide a brief description of your organization or division that will be using this service _____

_____

9. IDS Network Number _____ (This is for organizations purchasing IDS access).

10. Security Contacts [Standard Only]

Primary Security Contact

Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone: ___/___ FAX: ___/___ E-Mail Address: _____

Pager No.: _____

Secondary Security Contact

Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone: ___/___ FAX: ___/___ E-Mail Address: _____

Pager No.: _____

InterFrame Terms and Conditions

This agreement (the "Agreement") is by and between Performance Systems International, Inc., duly authorized and existing under the laws of the State of New York with its main office at 510 Huntmar Park Drive, Herndon, VA 22070 ("PSI"); and the Customer (as above) for the provision by PSI or its subcontractors of certain computer network services and the provision of the Customer of certain Equipment to facilitate such access, all as more particularly described below.

1. Local Access. PSI shall install or cause to be installed the requisite local access (or circuit) to provide the Customer a link to PSINet®. It is understood that PSI does not normally own or control the various facilities or telecommunications facilities to which it may provide access, except those specifically identified as belonging to PSI. Arrangements for use of, or access to, such facilities must be made with those who own or control them. The Customer is responsible for providing necessary cabling, equipment and manpower to distribute telecommunications facilities from the standard telco demarc to the Equipment Space when applicable.

PSINet® access shall be offered to the Customer in accordance with the criteria set by PSI which shall be attached hereto as Exhibit A. The Customer shall be responsible for user/access security and network access. PSI provides no user access security with respect to any of the Customer facilities or facilities of others. PSI will assist in network security breach detection or identification, but shall not be liable for any inability, failure or mistake in doing so.

2. PSI Technical Information. PSI shall provide to the Customer, in accordance with the extant PSI policies, operations support regarding network hardware, software, access techniques for local access, termination, equipment and service. In addition, PSI shall provide access by the Customer to copies of all its regular published reports concerning network usage.

PSI is not responsible to the Customer for the cost or expense of administrative, technical, emergency and support personnel at the Customer's location necessary for dealing with PSI and for providing and maintaining the Customer's own computer equipment, and PSINet® or other network access.

3 Service Commencement and Anniversary Date. "Service Commencement" refers to the fact that PSI begins immediately upon receipt of the executed PSI InterFrame Service Order Form and the Customer purchase order to provide services such as registration, training and consultation. For "Basic" and "Classic" service, the "Anniversary Date" refers to the day in which packets of data can be sent to the Customer's router or frame relay switch, but no later than three (3) calendar days after the circuit is installed and billed to PSI by the local access provider. For "Standard" service, the "Anniversary Date" refers to the day in which packets of data can be sent to the PSI node at the Customer's site.

4. Customer Connection Fee. For this service, the Customer shall commit to PSI through its purchase order the network connection costs upon execution of this Agreement, including service fees and local access installation and monthly lease costs. These fees are non-refundable. They are independent of the amount of traffic or system access by legitimate users at the Customer's location.

Service Commencement is initiated on the basis of the receipt of the executed, original PSI InterFrame Service Order Form and appropriate fees as detailed by PSI. Before working toward network access, PSI will invoice and must receive payment for the initial data line installation fee, startup fee, three (3) months of data line lease and three (3) months of service. Additional months of service will be invoiced separately to the Customer, including the PSI service fee(s) and actual monthly cost of the data line lease, and are payable NET 30.

The Customer must submit a purchase order for the first three (3) or six (6) month's costs (or longer term in order to receive the discount noted on page 1) provided the purchase order meets PSI requirements. The actual purchase order must be submitted along with this signed Agreement. A purchase order number will NOT suffice.

The Customer purchase order must contain the following language, "Notwithstanding any provisions to the contrary on the face of this purchase order, attachments to this purchase order, or on the reverse side of this purchase order, this purchase order is being used for administrative purposes only, and this order is placed under and subject solely to the terms and conditions of the PSI InterFrame Service Order Form executed between the Customer and PSI."

5. Warranties. Neither PSI nor its subcontractors warrant any connection to, transmission over, nor results or use of, any network connection or facilities provided (or failed to be provided) under this Agreement. The Customer is responsible for assessing its own computer and transmission network needs, and the results to be obtained therefrom.

6 Insurance. The parties shall each be responsible for assessing their own need for, and ability to maintain, property, casualty and liability insurance and shall obtain such insurance covering their risks as each sees fit. The parties agree not to make any claims against the other for any property loss (whether or not insured) and shall require their insurers, if any, to waive any right of subrogation against the others for any such loss.

7. Limitation of Liability. Neither party shall be liable to the other for any loss, damage, liability, claim or expense arising out of or in relation to this Agreement or the provision of the service or equipment, however caused, whether grounded in contract, tort (including negligence) or theory of strict liability. The parties agree to work in good faith to implement the purposes of this Agreement, but recognize that the network connection and services to be provided by PSI could not be made available under these terms or other similar terms without a substantial increase in cost if the parties were to assume a greater degree of liability to each other.

8. Term/Extension/Termination. This Agreement shall extend from the date first written below until (1) three months, (2) six months, (3) one year, or (4) two years from the initial Anniversary Date, and shall be subject to such extensions as the parties may agree in writing. The initial term of this Agreement shall be determined through this Agreement and the Customer's purchasing document. The Customer may opt for continuation of this Agreement and InterFrame service by issuing a new purchase order to commit the relevant fees for the additional term with monthly invoicing.

Service rendered beyond each term will be subject to continued relevant fees and monthly payments and the InterFrame Service Order Form in force at the extension date. Use as of that date will be considered acceptance of the new Agreement. For "Standard" service, the Customer shall not acquire any interest in, nor file any liens upon, the Equipment (as defined in Section 15 below). As a result of this Agreement or its termination; likewise, neither PSI nor its subcontractors shall acquire any ownership or leasehold interest in, nor file any liens upon, the Customer or the Equipment Space (as defined in Section 13 below) as a result of this Agreement or its termination.

Relevant fees refers to the price of the service at the date of renewal, including the published InterFrame service fees and local access/circuit costs which may change due to tariffs and other reasons. Services rendered refers to either packet access to PSINet® or continuing availability of the local access circuit to Customer's premises.

9. Notices. All notices given by any party or required under this Agreement shall be in writing and addressed to the relevant part(y)(ies) at the following locations:

PSI: Performance Systems International, Inc.
510 Huntmar Park Drive
Herndon, VA 22070
Attn.: Martin L. Schoffstall

The Customer:

See "Customer Representative" Information on Page 1.

All notices shall be sent by posting in first class mail, postage prepaid, and shall be deemed as given five calendar days after posting.

10. Limitation of Access. This service is to cover network access by the Customer only to any organization, person, etc. through the PSI service, and does not extend to any other person, corporation or entity, including affiliates

of the Customer, regardless of their relationship with the Customer. Customer includes all Customer staff and consultants paid by Customer while performing work for Customer.

As this is a fixed-price service, third party traffic, including packet access and electronic mail, sent from the Customer's facilities or received on behalf of the third party through the PSI service, is expressly forbidden under this Agreement. If USENET News is fed to another organization, no posting from that third party may be sent back through the Customer's connection to PSINet®.

Third party refers to separate non-Customer organizations or individuals using Customer's PSINet® connection for transfer of electronic data. It does not refer generally to organizations or individuals sending/receiving data to/from the Customer.

11. Access to Other Networks. Use of other networks may sometimes require approval of the respective network authorities and use will be subject to any acceptable usage policies such networks establish. Examples of such networks would be the NSFNET and ESNET. An example of an acceptable use policy can be found in Exhibit B.

12. Regulation and Authorization. All services to be provided by the Customer either in part or in total through PSINet® are appropriate subject to relevant Federal and State regulations. If these same services are offered through other networks, PSI accepts no responsibility for their authorization.

13. For BASIC and CLASSIC Customers Only:

A. Customer Premise Installation Support. In providing services under this Agreement, PSI personnel will not be present at any time on Customer premises.

If Customer requests PSI personnel to assist them on-site in initial installation of the InterFrame service according to some mutually agreed upon fee basis, the Customer waives its rights against PSI resulting from liability, loss, damage, claim or expense.

B. Customer Provided Equipment. To enable this InterFrame service, the Customer agrees to provide, install, configure and maintain Equipment, software, cabling, DSU/CSU to integrate their host or local area network (LAN) into the PSINet® wide area network (WAN) system. More specifically, the Customer's equipment must comply with the relevant portions of Exhibit C attached hereto which apply to the selected InterFrame service.

C. Retermination of Circuit. Reterminating the circuit refers to relocating the termination point of the dedicated data circuit used to provide the InterFrame service at the Customer's premises. Should the Customer deem it necessary to reterminate the circuit, the customer will be responsible for certain fees. PSI is not responsible for service disruptions caused by the retermination.

D. Upgrade Policy. From time to time, PSI will need to make upgrades to its network infrastructure. These changes may require Customer Equipment to be upgraded as well to continue InterFrame service under this Agreement. Customer agrees to make such upgrades to its hardware/software as specified by PSI technical staff through written notification to Customer at least thirty (30) days after notification of such required changes to Customer Equipment. PSI is not responsible for degradation or disruption of the InterFrame service should Customer not make specified changes as notified. It is highly recommended that the Customer have a hardware and software maintenance support contract on the router used for this service.

14. For CLASSIC and STANDARD Customers Only:

A. Service Adjustments. If a PSI point-of-presence (POP) fails due to it's equipment or circuit(s) between POP's failing (except in the case of fire, flood or other act of God), and this failure results in the disruption of the Customer's service, then the following adjustments will be made:

If after four hours PSI has not provided the Customer a PSI dialup packet access point as it normally provides during failures, but in any case after twelve hours, PSI will provide additional service days to the Customer beyond the contract term for any calendar day or portion thereof of the service disruption. Only one additional service day can be granted per calendar day outage(s).

B. CSG Support. PSI's Customer Support Group (CSG) will provide unlimited electronic mail and telephone support on LAN integration of host computers and applications into PSINet®.

15. For STANDARD Customers Only:

A. Equipment Space. In order to allow for interconnection of its computer facilities, terminals and Local Area Networks ("LAN"), if any, to the high-speed computer network called PSINet®, the Customer shall, during the term of this Agreement, provide and maintain suitable communications equipment space (the "Equipment Space") meeting or exceeding the specifications set forth in Exhibit D attached hereto (the "Specifications"). The Equipment Space will house equipment owned by PSI required for network access (the "Equipment"). The Equipment Space shall be accessible to PSI and its subcontractors in accordance with the Specifications.

B. Equipment Access and Connection. The Equipment shall be installed, inspected and maintained by PSI, and/or its subcontractors, as PSI shall designate in writing. The Customer shall provide 24 hour per day, 7 days per week access to the Equipment (with appropriate escort if required by the Customer) by such individuals as are designated by PSI. If the Customer can not provide this access, any guarantee of service under this Agreement, including the provisions of the section entitled "Service Adjustments" (Section 15A), is suspended. PSI shall provide sufficient information to allow the individuals so designated to be properly identified as such by the Customer. The Customer retains the right to bar access to any particular individual not acceptable to it, and may require PSI to substitute other individuals. PSI agrees to provide at least 24 hours notice of the need for access except in cases of emergency.

The Customer shall not allow its personnel or others on its premises contact with the Equipment, nor to tamper with the Equipment or open the Equipment cabinets. PSI will authorize by direction on an event-by-event basis with verbal authorization, appropriate individuals at the Customer's location to open Equipment cabinets for appropriate routine and emergency reasons, at no risk to the Customer or its LAN. The Customer shall retain the right to disconnect the Equipment from its LAN at any time. PSI may remove the Equipment from the Equipment Space at any time if the Customer disconnects, or fails to maintain a connection to, the Equipment. PSI also reserves the right to shut down PSI's node at the Customer's location in accordance with its operating procedures.

C. Relocation of PSI Equipment. Should the Customer deem it necessary to have PSI's Equipment relocated, such relocations may only be performed by PSI or its subcontractors at the Customer's expense. Such relocations will be performed as per PSI's schedule with advance notice by the Customer, including exact new locations and other logistical and telecommunications information. PSI is not responsible for service disruptions caused by the Customer's Equipment relocation requirements.

16. Extended Term and Discount. If the customer commits to an extended term of service by initialing the appropriate selection on the *InterFrame Service Order Form*, discounts apply. The customer cannot cancel the service during this extended term.

17. No Assignment. The Customer shall not sell, transfer, or assign this Agreement without the prior written consent of PSI. Any act in derogation of the foregoing shall be null and void; provided, however, that any such assignment shall not relieve the Customer of its obligations under this Agreement.

18. Severability. If any provision of this Agreement is held by a court of competent jurisdiction to be contrary to law, the remaining provisions of this Agreement will remain in full force and effect.

19. Entire Agreement. This Agreement represents the complete agreement and understanding of the parties with respect to the subject matter herein, and supersedes any other agreement or understanding, written or oral.
This Agreement may be modified only by a writing signed by all parties.

20. Security Filtering. PSI shall provide InterFrame Security Filtering option capability under the following terms and conditions:

A. PSI shall provide packet filtering based on network number and

protocol for non-Customer networks, and on an individual host basis for customer host computers.

B. Customer will delegate two security contact points, a primary and a secondary. Contact point names, phone numbers, fax numbers, and electronic mail addresses must be provided to PSI. PSI will take direction ONLY from these contact points for filtering.

C. Customer security contact points must participate in an initial phone consultation with PSI's Security Coordinator.

D. Customer requests for filtering will be made by electronic mail or fax to the designated PSI address to facilitate an audit trail.

E. PSI Network Operations can be instructed by other Customer contacts to disable non-PSINet℠ access (for instance, NSFNET and CIX access).

F. Neither PSI nor its subcontractors warrant the utility nor results of this Security Filtering Service.

G. Neither party shall be liable to the other for any loss, damage, liability claim or expense rising out of or in relation to this Addendum and service however caused, whether grounded in good contract, tort (including negligence) or theory of strict liability. The parties agree to work in good faith to implement the purposes of the Agreement, but recognize that the services provided could not be made under other terms without a substantial increase in cost if the parties were to assume a greater degree of liabiltiy to each other.

21. Security Encryption. PSI shall provide InterFrame Security Encryption option capability under the following terms and conditions:

A. PSI shall provide packet encryption based on network numbers to other PSINet InterFrame Standard sites with encryption options only using PSI proprietary equipment.

B. Customer will delegate two security contact points, a primary and a secondary. Contact point names, phone numbers, fax numbers, and electronic mail addresses must be provided to PSI. PSI will take direction ONLY from these contact points for encryption.

C. Customer security contact points must participate in an initial phone consultation with PSI's Security Coordinator.

D. Customer requests for encryption will be made by electronic mail or fax to the designated PSI address to facilitate an audit trail.

E. PSI Network Operations can be instructed by other Customer contacts to disable non-PSINet℠ access (for instance, NSFNET and CIX access).

F. Neither PSI nor its subcontractors warrant the utility nor results of this Security Encryption Service.

G. Neither party shall be liable to the other for any loss, damage, liability claim or expense rising out of or in relation to this Addendum and service however caused, whether grounded in good contract, tort (including negligence) or theory of strict liability. The parties agree to work in good faith to implement the purposes of the Agreement, but recognize that the services provided could not be made under other terms without a substantial increase in cost if the parties were to assume a greater degree of liabiltiy to each other.

In Witness Whereof, the parties have entered into this agreement as of the date set forth:

Customer Representative: _____
(please type or print)

Customer Signature: _____

Date: _____

PSI Corporate Officer: _____
(please type or print)

PSI Corporate Officer Signature: _____

Date: _____

EXHIBIT A
PSI, INC.
ACCEPTABLE USE POLICY

These statements represent a guide to the acceptable use of PSI facilities. PSI, Inc. recognizes as acceptable all forms of data communications across its network, except where Federally subsidized facilities of transport (such as national backbones like NSFNET) may require limitations, or State/Federal/International law prohibits. In those cases, use of the network should adhere to the general principle of advancing science and education through interexchange of information among research and educational institutions except where specific policy statements exist (see example, Exhibit B).

In cases where data communications are addressed to recipients outside of the PSI supplied network and are carried over other regional networks or the Internet, PSI users are advised that acceptable use policies of those other networks apply and may, in fact, limit use.

If PSI is informed by Federal/State/International authorities of inappropriate or illegal use of PSI facilities and/or other networks these determinations will be binding on the Customer.

EXHIBIT B
NSFNET BACKBONE SERVICE
ACCEPTABLE USE POLICY

GENERAL PRINCIPAL:

(1) NSFNET Backbone services are provided to support open research and education in and among US research and instructional institutions, plus research arms of for-profit firms when engaged in open scholarly communication and research. Use for other purposes is not acceptable.

SPECIFICALLY ACCEPTABLE USES:

(2) Communication with foreign researchers and educators in connection with research or instruction, as long as any network that the foreign user employs for such communication provides reciprocal access to US researchers and educators.

(3) Communication and exchange for professional development, to maintain currency, or to debate issues in a field or subfield of knowledge.

(4) Use for disciplinary-society, university-association, government-advisory, or standards activities related to the user's research and instructional activities

(5) Use in applying for or administering grants or contracts for research or instruction, but not for other fund-raising or public relations activities.

(6) Any other administrative communications or activities in direct support of research and instruction.

(7) Announcements of new products or services for use in research or instruction, but not advertising of any kind.

(8) Any traffic originating from a network of another member agency of the Federal Networking Council if the traffic meets the acceptable use policy of that agency.

(9) Communication incidental to otherwise acceptable use, except for illegal or specifically unacceptable use.

UNACCEPTABLE USES:

(10) Use for for-profit activities (consulting for pay, sales or administration of campus stores, sale of tickets to sports events, and so on) or use by for-profit institutions unless covered by the General Principle or as a specifically acceptable use.

(11) Extensive use for private or personal business. This statement applies to use of the NSFNET Backbone only. NSF expects that connecting networks will formulate their own use policies. The NSF Division of Networking and Communications Research and Infrastructure will resolve any questions about this Policy or its interpretation.

EXHIBIT C
ROUTER, DSU/CSU
COMPLIANCE

ROUTER:

The customer's router must be accepted by PSI as compliant with PSINet acceptance criteria and program; this includes:

(1) any Cisco Systems, Inc. router running 9.1 software release or greater and,
(2) the Livingston PortMaster IRX family of routers or,
(3) the Morning Star Express router or,
(4) Sun Microsystems Sunlink Frame Relay router with a SUN4 (sparc) class system running sunos 4.1X or higher as well as a SunLink HSI/S or SunLink MCP interface or,
(5) the Brixton BrxFR Frame Relay software available for SunOS4.x, Solaris and RS6000 (AIX) platforms. With a Sun SPARCStation, you can use the local tty ports to get up to 56Kbps service if you do NOT have a mouse, keyboard, and graphics display. If your SPARCStation is equipped with these devices, you will need a SBUS serial line card, available from Brixton.

DSU/CSU:

56 Kbps: Must be compatible with the AT&T 56 Kbps DDS specification. PSI suggests the Case/Datatel 3800, DCP3080 CSU/DSU or the Data Race/Rally 56 CSU/DSU, which PSI sells.

128 Kbps, 256 Kbps, 384 Kbps, 512 Kbps, T1: Must be compatible with the AT&T T1 ESF specification. PSI suggests the Digital Link DL551VX. Digital Link Corporation is located in Sunnyvale, CA and can be reached at +1 408.745.6200, or the Astrocomm NX1T1 CSU/DSU, also sold by PSI.

EXHIBIT D
SPECIFICATIONS

1. The Customer shall provide to PSI space suitable for the placement of network interface equipment according to the mutually agreed upon floor plan. If the area designated shall have a raised floor for system cabling then the minimum clear ceiling height shall be eight (8) feet. If the area designated shall not have a raised floor then the minimum clear ceiling height shall be nine (9) feet.

2. The Customer shall maintain the equipment area as dust free as possible during and after installation to the extent normal for computer-grade equipment. The floor shall be tiled or otherwise suitably sealed, level and free from excessive vibration. The wall and ceiling finish shall be a dust-free surface that can be cleaned and will not flake.

3. The Customer shall maintain an ambient temperature between forty-five (45) degrees and ninety (90) degrees Fahrenheit, and ambient relative humidity between twenty (20) percent minimum and ninety (90) percent maximum.

4. The Customer shall not cause to be placed in the same or adjacent room the following types of goods or equipment which could cause system malfunction or interference:

High concentrations or corrosive gases, metallic contaminants, dust, airborne paper fibre or carbon particles;

Electromagnetic fields greater than 1 Volt per meter;

Acoustical noise in excess of that allowed by OSHA or in excess of ninety (90)dB.

5. The Customer shall provide for and arrange for disposal of rubbish, including the containers in which the equipment is delivered, provided that PSI shall certify that the rubbish contains neither hazardous nor toxic wastes requiring special disposal techniques or permits.

6. The Customer shall not place obstructions in the area of the floor plan marked as the maintenance area.

7. The Customer shall provide an electrical service which complies both with all local codes and with the National Electrical Code. The electrical service shall be a continuous 24 hour non-switchable, single phase, 3 wire individually fused circuit, 120 VAC, 60 Hz, 20 Amps.

8. The Customer shall provide illumination with light intensity of at least fifty (50) foot-candles (taken at floor level) in the equipment area.

9. The Customer shall provide air-conditioning adequate for a heat load of five thousand (5000) BTU's

10. PSI advises the Customer that cabinets are twenty three (23) inches wide by thirty (30) inches deep by up to forty two (42) inches high and require front and rear access.

Subscribe to PSI's InterFrame Classic 56Kbps service for one year[1] and get:

- **Free Morning Star Technologies Router,**[2]
- **Free DSU & Cable,**[3]
- **No One-Time Set-up Fee**[4]

Call 1.800.82psi82

Offer good through May 31, 1994 or while supplies last.

[1] *No advance payment is required.*
[2] *Morning Star Express Router (a $1,795 value)*
[3] *Data Race Rally 56 DSU with cable (a $550 value)*
[4] *No one-time set-up fee of $1,000 for IF56C service.*
Limit: *Up to 5 sites per customer under this limited time offer. Customer must commit to one-year subscription.* This special offer is not valid in conjunction with any other PSI promotion. *Other restrictions apply. Contact your PSI sales representative for details.*

Performance Systems International, Inc.
510 Huntmar Park Drive
Herndon, VA 22070
Phone: +1 703.620.6651
Fax: +1 703.620.4586
E-Mail: info@psi.com
FAXBACK Info: 1.800.faxpsi1

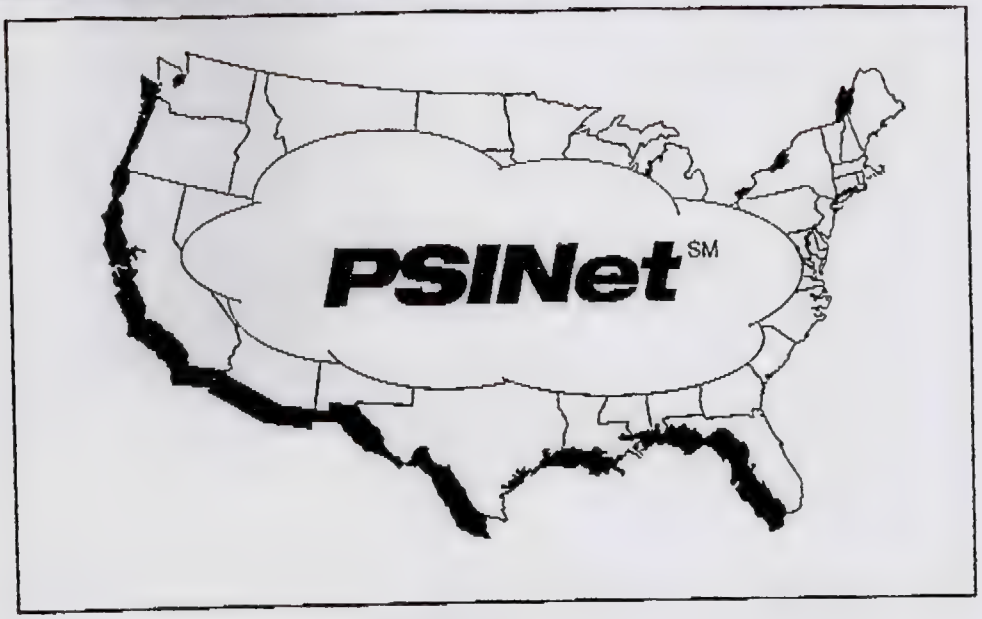


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SCS℠

STANDARD CONNECTION SERVICE

Secure, Value-Added Leased Line Service to PSINet® and the Internet



HIGHLIGHTS

- Internet Access
- Secure Interconnect - POPs
- Security Filtering
- CIX Access
- 19.2 Kbps to 3.0 Mbps
- TCP/IP Internetworking
- Free Local Dialups (IDS)
- Unlimited Consulting from CSG
- Emergency Backup Service
- Service Guarantees
- National Availability
- Flat Fee
- All Equipment Provided and Maintained by PSI
- "Instant" Connection
- Free USENET/News Feed
- On-Site Consulting
- User's Group
- Secure Dialup Option

PSI's Standard Connection Service (SCS) is a *turnkey* package providing LAN integration of your computers (from PCs to mainframes) into the nationally available PSINet and the global Internet. This service addresses both the demanding network user too busy to focus on the myriad of network systems and support issues required, and the newcomer to internetworking looking for uncomplicated solutions for his company's information needs.

NATIONAL AVAILABILITY

PSINet is a national internetwork which uses the common networking languages of TCP/IP and OSI to provide service to hundreds of organizations throughout the U.S. and by direct attachment to the NSFNET, Commercial Internet Exchange (CIX), and other international networks, to tens of thousands of other organizations throughout the globe; this is the global Internet.

Throughout the U.S., PSINet Points-of-Presence (POP) have been deployed with new cities being added. These POPs are co-located in secure facilities, leased from telephone companies and provide privacy, high reliability, direct access to fiber optic infrastructure, and professional on-site maintenance, a unique and unmatched capability.

SUPPORT AND SERVICE

All aspects of this premier service and continued reliable performance are the responsibility of PSI. These responsibilities include: acquisition and management of leased line facilities, ordering and installing router and other data communications equipment on your site and consulting on integration into your environment. All components of our infrastructure, including those at your site, are monitored, managed and maintained by our Network Information and Support Center (NISC) staff.

Unlike other packet switched networks, there are no additional costs for connection time, quantity of packets, or international access. A flat fee which can be budgeted in advance is the standard for the 90's.

PSI's NISC provides 24 hours per day, 7 days per week support, and can be called, toll free, for any network operation problems. In addition, engineers, technicians, and systems administrators are available to provide integration of your systems into PSINet.

Other value added services include: Domain Name service, White Pages directory service, local dialups throughout the U.S., three-day free tutorials, consultation, network use statistics, and a six year old users group.

FEATURES

- PSINet and CIX Participation
- Turnkey
- Secure Interconnect
- PSI's Network Operations
- Unlimited Consultation
- Free Local Dialups (IDS)
- Network and Domain Registration and Support
- Security Filtering
- Emergency Backup Service
- SNMP Statistics
- USENET/News
- "Instant" Connection
- On-Site Consulting
- PSITech - The Users Group
- Secure Dialup Option

BENEFITS

PSINet is a commercial internetwork with no restrictions on use which is professionally run, extremely reliable, and contractually guaranteed delivery. Through the Commercial Internet Exchange (CIX), commercial internetworking providers are interconnected to provide an internet that is free of any restrictions on commercial usage.

All aspects of the connection and continued reliable performance are the responsibility of PSI. These responsibilities include: acquisition and management of leased line facilities, ordering and installation at your site and consulting on integration into your environment.

Privacy is guaranteed as your network traffic is not sent through a university or other organization, but through the same system that guarantees your telephone privacy. With UPS power and professional telephone company assistance, high reliability is insured.

24 hours/day Network Operations for trouble reporting and dispatch available via a toll free telephone number.

The PSI Customer Support Group (CSG) is professionally staffed with seasoned operators, engineers and systems administrators to provide quick customer integration of their facilities and their applications.

Remote offices, telecommuters, or traveling staff can have telnet/rlogin access in most major cities up to 2400 baud at no cost through IDS. TN3270 is also supported.

PSI will obtain a number and register a domain name for your organization if you don't have one. This cuts through the delays and mistakes of dealing with the various registration organizations. Highly reliable servers providing fault-tolerant support of your domain name, and network routing.

PSI can provide access list control of your networks and hosts to provide Internet security.

A backup TCP/IP dialup capability is available to all customers when an outage occurs, providing a unique level of interconnectivity regardless of the circumstances.

Complete statistics on your usage of the network from the people who co-invented SNMP, including daily, weekly, and monthly totals, as well as busy hours, and errors. Direct access via SNMP to the PSINet infrastructure.

A free, direct feed from one of the top 50 USENET distribution sites, providing timely access to the largest distributed BBS in existence. ClariNet information services are also available through UUPSI.

You provide a standard phone line, and PSI will ship, via UPS Second Day, a dialup router that provides you with an instant connection.

All new SCS customers starting in 1992 will be provided with one day of on-site consulting by a PSI technical staff member.

Meeting face-to-face with the network engineers and service providers of PSINet provides a unique opportunity to jointly shape the future of internetworking technology and service. Meets quarterly.

With a 10% yearly surcharge, PSI can provide secure IDS service to your LAN.

SCS Pricing:

19.2 Kbps Service	$ 12,500/year plus line costs
56 Kbps Service	27,500/year plus line costs
500 Kbps Service	45,000/year plus line costs
1.5 Mbps (T1 Service)	65,000/year plus line costs
3.0 Mbps Service	85,000/year plus line costs

For further information, please contact:

Performance Systems International, Inc.
510 Huntmar Park Drive
Herndon, VA 22070
Phone: 1.800.82PSI82 or +1 703.709.0300
Fax: +1 703.904.1207 Email: info@psi.com

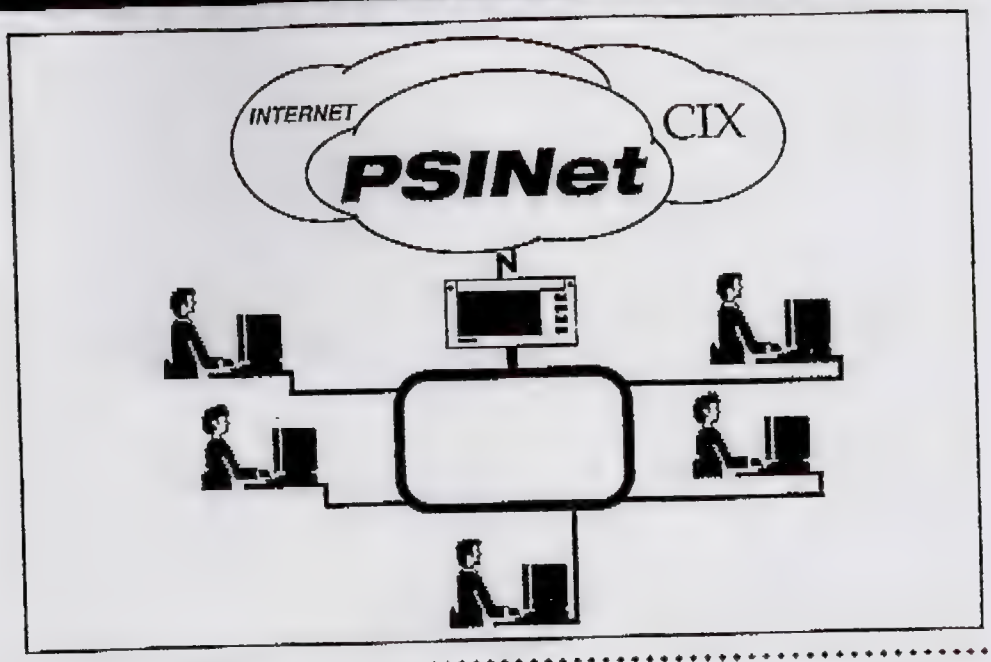
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CCS[SM]

CUSTOMER CONNECTION SERVICE

Value-Added
Leased Line Service to
PSINet® and the Internet



HIGHLIGHTS

- Internet Access
- Secure Interconnect - POPs
- CIX Access
- 19.2 Kbps to T1 Service
- TCP/IP Internetworking
- Free Local Dialups (IDS)
- Unlimited Consulting from CSG
- Emergency Backup Service
- Service Guarantees
- National Availability
- Flat Fee
- Free USENET/News Feed
- Users Group

PSI's Customer Connection Service (CCS) provides LAN integration of your computers (from PCs to mainframes) into the nationally available PSINet and the global Internet. This service provides high quality performance, and availability, as with other PSI services, with the additional flexibility of allowing customer owned routers and communications equipment to be attached to PSINet.

CCS allows for your current investment in LAN internetworking (including your router) to be leveraged and provide a broader level of service to your staff, and your customers. Electronic mail, USENET/News, file transfer, terminal access, bulletin boards, library access are all available to a current community in the tens of millions, and PSINet is your means to participate. With complete control of the PSINet interconnection router, customers can institute whatever security strategy they need.

Unlike other packet switched networks, there are no additional costs for connection time, quantity of packets, or international access. A flat fee which can be budgeted in advance is the standard for the 90's.

NATIONAL AVAILABILITY

PSINet is a national internetwork which uses the common networking languages of TCP/IP and OSI to provide service to hundreds of organizations throughout the U.S. and by direct attachment to the NSFNET, Commercial Internet Exchange (CIX) and other international networks, to tens of thousands of other organizations throughout the globe; this is the global Internet.

Throughout the U.S., PSINet Points-of-Presence (POP) have been deployed with new cities being added. These POPs are co-located in secure facilities, leased from telephone companies and provide privacy, high reliability, direct access to fiber optic infrastructure, and professional on-site maintenance, a unique and unmatched capability.

SUPPORT AND SERVICE

PSI's Network Information and Support Center (NISC) provides 24 hours per day, 7 days per week support, and can be called, toll free, for any network operation problems. In addition, engineers, technicians, and systems administrators are available to provide integration of your systems into PSINet.

Other value added services include: Domain Name service, White Pages directory service, local dialups throughout the U.S., three-day free tutorials, customer support, network use statistics, and a six year old users group.

FEATURES

- PSINet Participation
- Customer Owned Router
- Secure Interconnect
- PSI's Network Operations and Customer Support
- Free Local Dialups (IDS)
- Network and Domain Registration and Support
- Emergency Backup Service
- SNMP Statistics
- USENET/News
- PSITech - The Users Group
- CIX Participation

BENEFITS

A commercial internetwork with no restrictions on use. Professionally run, extremely reliable, with contractually guaranteed delivery.

Complete customer control and configuration to provide security mechanisms and filters as they are needed. No liability or security considerations for PSI staff or equipment on the customer's premise. Use of currently available equipment.

Privacy is guaranteed as your network traffic is not sent through a university or other organization, but through the same system that guarantees your telephone privacy. With UPS power and professional telephone company assistance, high reliability is insured.

24 hours/day Network Operations for trouble reporting and dispatch is available via a toll-free telephone number. The PSI Customer Support Group (CSG) is professionally staffed with seasoned engineers and systems administrators to provide quick customer integration of their facilities and their applications.

Remote offices or traveling staff can have telnet/rlogin access in most major cities for next to no cost at up to 2400 baud.

PSI will obtain a network number and register a domain name for your organization if you don't have one. This cuts through the delays and mistakes of dealing with the various registration organizations. Highly reliable servers provide fault-tolerant support of your domain name, and network routing.

A backup TCP/IP dialup capability is available to all customers when an outage occurs, providing a unique level of interconnectivity regardless of the circumstances.

Complete statistics on your usage of the network from the people who co-invented SNMP, including daily, weekly, and monthly totals, as well as busy hours, and errors. Direct access via SNMP to the PSINet infrastructure.

A free, direct feed from UUPSI, one of the top ten USENET sites, providing timely access to the largest distributed BBS in existence. ClariNet information services are also available through UUPSI.

Meeting face-to-face with the network engineers and service providers of PSINet provides a unique opportunity to jointly shape the future of internetworking technology and service. Meets quarterly.

Through the Commercial Internet Exchange (CIX), commercial internetworking providers are interconnected to provide an internet that is free of any restrictions on commercial usage.

CS Pricing:

19.2 Kbps Service	10,500/year plus line costs
56 Kbps Service	19,500/year plus line costs
1.5 Mbps (T1 Service)	49,000/year plus line costs

For further information, please contact:

Performance Systems International, Inc.
510 Huntmar Park Drive
Herndon, VA 22070
Phone: 1.800.82PSI82 or +1 703.709.0300
Fax: +1 703.904.1207 E-mail: info@psi.com

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Organizational

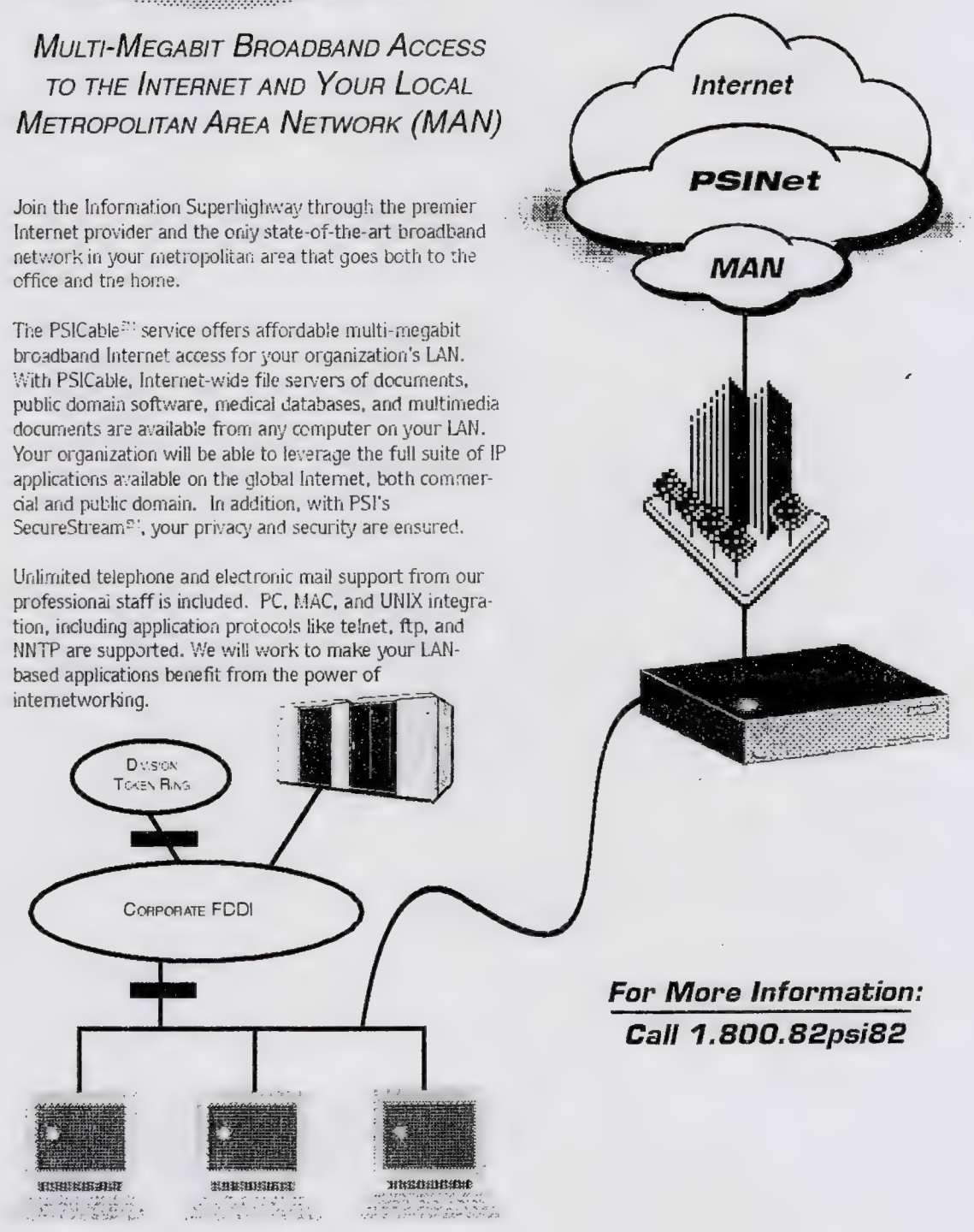
PSICable℠

Multi-Megabit Broadband Access to the Internet and Your Local Metropolitan Area Network (MAN)

Join the Information Superhighway through the premier Internet provider and the only state-of-the-art broadband network in your metropolitan area that goes both to the office and the home.

The PSICable℠ service offers affordable multi-megabit broadband Internet access for your organization's LAN. With PSICable, Internet-wide file servers of documents, public domain software, medical databases, and multimedia documents are available from any computer on your LAN. Your organization will be able to leverage the full suite of IP applications available on the global Internet, both commercial and public domain. In addition, with PSI's SecureStream℠, your privacy and security are ensured.

Unlimited telephone and electronic mail support from our professional staff is included. PC, MAC, and UNIX integration, including application protocols like telnet, ftp, and NNTP are supported. We will work to make your LAN-based applications benefit from the power of internetworking.



Your Organization's LAN

- Multi-megabit Broadband Internet Access
- PSI-Managed Security Filtering and Privacy
- Supports Multimedia Applications
- Image and Graphic Transmission
- CIX Access
- Flat Fee
- Unlimited Phone Consultation
- USENET News
- Domain Name and Network Number Registration and Support
- Supports Ethernet and Token Ring LANs
- High Performance Telecommuting with PSICable for Individuals

For More Information:

Call 1.800.82psi82

THE MAN

For each town head end, ten to twenty separate 4 Mbps cable segments are distributed to different geographic areas of the town providing 40 to 80 Mbps of MAN bandwidth in 1Q94.

Each segment is normally shared by ten to twenty organizations providing up to 4 Mbps peak performance between organizations on the MAN.

Your organization then subscribes to the amount of off-MAN performance to the Internet you want, from 128 Kbps to 1.5 Mbps.

With PSI's modular network and RF architecture each cable segment can be upgraded to higher performance technologies from 10 Mbps to 40 Mbps in 1995.

INTEGRATION SERVICES

As the largest Internet service provider in the world, PSI has an experienced and responsive Customer Support Group available to integrate your computer, whether it's a MAC, PC, SUN, or other computer, into the worldwide web of the Internet. Your computer system will be able to participate in a variety of applications from electronic mail to file transfers to dozens of information services.

PSINET AND CIX PARTICIPATION

PSINet, a commercial internetwork with no restrictions on use, is professionally run, extremely reliable, and offers contractually guaranteed delivery. Through the Commercial Internet Exchange (CIX), commercial internetworking providers are interconnected to provide an internet that is free from any restrictions on commercial usage.

DOMAIN NAME REGISTRATION

PSI will register a domain name for your organization if you don't have one. This cuts through the delays and mistakes of dealing with the various registration organizations. PSI's highly reliable servers provide fault-tolerant support of your domain name.

PSI's NETWORK OPERATIONS

24 hours/day Network Operations for trouble reporting and dispatch is available.

UNLIMITED CONSULTATION

The PSI Customer Support Group (CSG) provides unlimited consulting in such areas as: UNIX network/systems integration, Macintosh and PC network integration, sendmail.cf configuration, CNews/NNTP, and General Internet integration.

PSITECH-THE USER'S GROUP

Meeting face-to-face with the network engineers and service providers of PSINet offers a unique opportunity to jointly shape the future in internetworking technology and service. Meets quarterly.

MULTI-MEGABIT BROADBAND ACCESS

Multi-megabit broadband access makes it possible to access public domain software, databases, and other large files including multimedia documents that are available on the Internet MAN and the Internet at speeds never before available at a price your organization can afford.

USENET NEWS

USENET News, the largest distributed bulletin board service (BBS) in existence, is included with PSICable service. Your site will be able to download over 50 Mbytes/Day using NNTP.

TELECOMMUTING/CABLECOMMUTING

Using PSICable's Individual service for MAN access, your staff will be able to electronically commute with performance characteristics that blur the distinction of being at home or work.

SECURITY

PSI can provide security filtering for your network as well as encrypted privacy (SecureStream™) between the organizational LAN and PSICable for Individuals.

Off-MAN Subscription to Internet

128 Kbps Off-MAN
.....$2,000/Month
256 Kbps Off-MAN
.....$2,250/Month
512 Kbps Off-MAN
.....$2,500/Month
1.5 Mbps Off-MAN
.....$2,750/Month

One-Time Set-up Fee
.....$5,000

Options:

USENET News
.....$95/Month

Security Filtering
.....$100/Month
Privacy
.....Call

Minimum Commitment:
.....One Year

Performance Systems International, Inc.
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FAXBACK: 1 800.FAX.PSI-1
E-Mail: *info@psi.com*

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Small Business

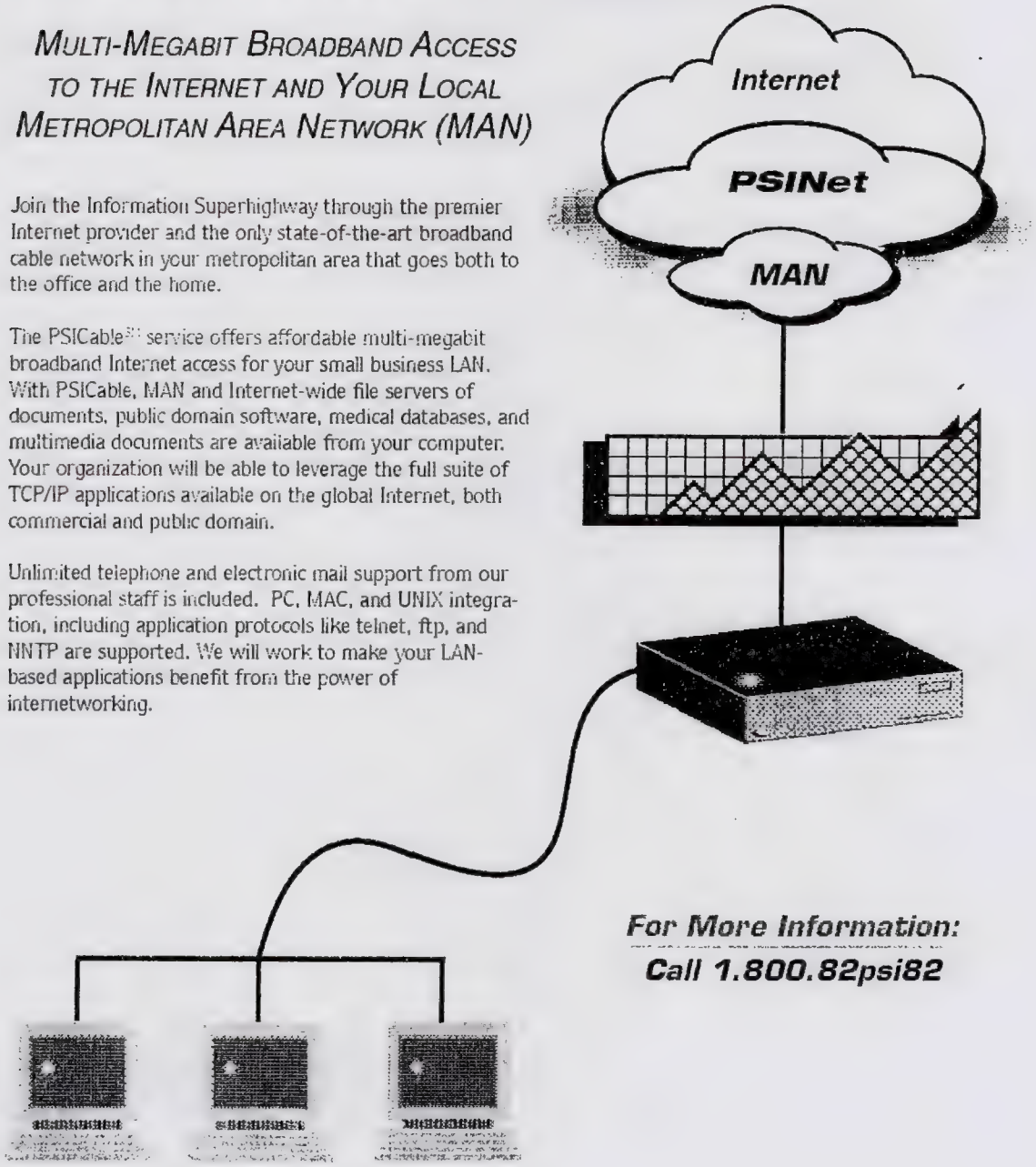
PSICable℠

Multi-Megabit Broadband Access to the Internet and Your Local Metropolitan Area Network (MAN)

Join the Information Superhighway through the premier Internet provider and the only state-of-the-art broadband cable network in your metropolitan area that goes both to the office and the home.

The PSICable℠ service offers affordable multi-megabit broadband Internet access for your small business LAN. With PSICable, MAN and Internet-wide file servers of documents, public domain software, medical databases, and multimedia documents are available from your computer. Your organization will be able to leverage the full suite of TCP/IP applications available on the global Internet, both commercial and public domain.

Unlimited telephone and electronic mail support from our professional staff is included. PC, MAC, and UNIX integration, including application protocols like telnet, ftp, and NNTP are supported. We will work to make your LAN-based applications benefit from the power of internetworking.



Your Small Business LAN

- Multi-megabit Broadband Internet Access
- Supports Multimedia Applications
- Image and Graphic Transmission
- CIX Access
- Flat Fee
- Unlimited Phone Consultation
- USENET News
- Domain Name and Registration and Support
- Supports Small Business Ethernet
- High Performance Telecommuting with PSICable for Individuals
- Supports any Computer--from PC to Mainframe
- TCP/IP

For More Information:

Call 1.800.82psi82

THE MAN

Using the worldwide standard for inter-enterprise communications - TCP/IP - your local MAN will give you access across town or across the Pacific.

For each town head end, ten to twenty separate 2 Mbps cable segments are distributed to different geographic areas of the town providing 20 to 40 Mbps of MAN bandwidth in 2Q94.

Each segment is shared by ten to twenty organizations providing 500 Kbps wirespeed peak performance between organizations.

With this architecture each cable segment can be upgraded to higher performance technologies from 100 Mbps to 200 Mbps in 1995.

INTEGRATION SERVICES

As the largest Internet service provider in the world, PSI has an experienced and responsive Customer Support Group available to integrate your computer, whether it's a MAC, PC, SUN, or other computer, into the worldwide web of the Internet. Your computer system will be able to participate in a variety of applications from electronic mail to file transfers to dozens of information services.

PSINET AND CIX PARTICIPATION

PSINet, a commercial internetwork with no restrictions on use, is professionally run, extremely reliable, and offers contractually guaranteed delivery. Through the Commercial Internet Exchange (CIX), commercial internetworking providers are interconnected to provide an internet that is free from any restrictions on commercial usage.

DOMAIN NAME REGISTRATION

PSI will register a domain name for your organization if you don't have one, thereby simplifying initial integration. PSI's highly reliable servers provide fault-tolerant support of your domain name 24 hours a day.

PSI's NETWORK OPERATIONS

24 hours/day Network Operations for trouble reporting and dispatch is available.

UNLIMITED CONSULTATION

The PSI Customer Support Group (CSG) provides unlimited consulting in such areas as: UNIX network/systems integration, Macintosh and PC network integration, sendmail.cf configuration, CNews/NNTP, and general Internet integration.

MULTI-MEGABIT BROADBAND ACCESS

Multi-megabit broadband access makes it possible to access public domain software, databases, and other large files including multimedia documents that are available on the Internet MAN and the Internet at speeds never before available at a price your organization can afford.

USENET NEWS

USENET News, the largest distributed bulletin board service (BBS) in existence, is included with PSICable service. Your site will be able to download over 50 Mbytes/Day using NNTP.

TELECOMMUTING/CABLECOMMUTING

Using PSICable's Individual service, your staff will be able to electronically commute with performance characteristics that blur the distinction of being at home or work.

NETWORK NUMBERS

Up to 16 IP addresses or individual computers will be assigned to your subscription to PSICable. Each address will be a Class A network number 38.

SECURITY

PSI can provide the filtering for your network to remain safe from outside intrusion.

Price:
.....$400/Month

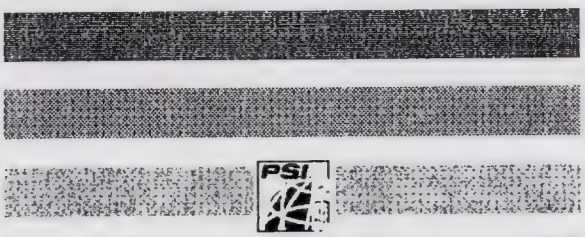
Option:

USENET News
.....$95/Month

One-Time Set-up Fee
.....$2,000

Security Filtering
.....$100 Month

Minimum Commitment:
.....3 Months



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1 703.709.0300
FAX: 1 703.904.1207
FAXBACK: 1 800.FAX.PSI.1
E-Mail: *info@psi.com*

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Individual

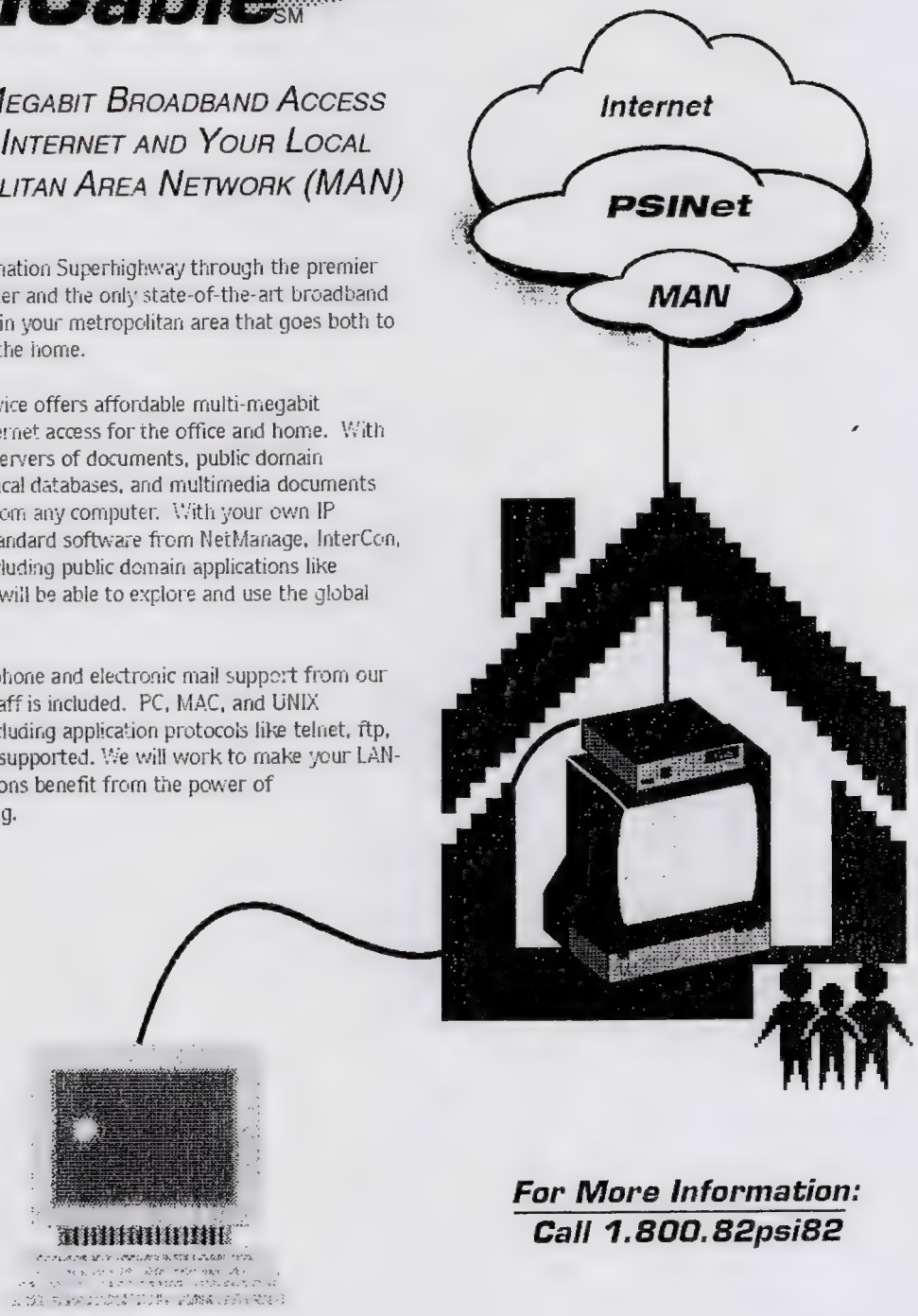
PSICable℠

Multi-Megabit Broadband Access to the Internet and Your Local Metropolitan Area Network (MAN)

Join the Information Superhighway through the premier Internet provider and the only state-of-the-art broadband cable network in your metropolitan area that goes both to the office and the home.

PSICable℠ service offers affordable multi-megabit broadband Internet access for the office and home. With PSICable, file servers of documents, public domain software, medical databases, and multimedia documents are available from any computer. With your own IP address and standard software from NetManage, InterCon, and others (including public domain applications like MOSAIC), you will be able to explore and use the global Internet.

Unlimited telephone and electronic mail support from our professional staff is included. PC, MAC, and UNIX integration, including application protocols like telnet, ftp, and NNTP are supported. We will work to make your LAN-based applications benefit from the power of internetworking.



- Multi-megabit Broadband MAN and Internet Access
- TCP/IP
- Flat Fee
- Unlimited Phone Consultation
- USENET News Included
- High Performance Telecommuting
- Standard 10base2 (Thinnet) Ethernet Compatibility
- Dedicated IP Address for Your PC, MAC or Workstation
- Internet Electronic Mailbox (Using POP3)
- Up to 3 IP Addresses for your Home Machines
- Supports any Computer--from PC to Mainframe
- POP3 Mailbox

For More Information:
Call 1.800.82psi82

SPECIAL PROMOTION

Through September 30, we're running a special promotion.

CALL US

What You Will Need

You will need a standard PC, MAC, or workstation with a standard ethernet interface (or NIC) that supports thinnet (10base2), and the TCP/IP software for your system.

The Basics

PSI will deliver to your home a Cable Relay box to distribute 10base2 Ethernet to your PC(s) or workstation(s). PSI will assign an IP address (from its Class A network number 38) for your PC. Each PC (up to 3) that you want to have access will need a separate IP address.

Using TCP/IP, the "Open System" capability of PSICable will allow you to use any network software of your choosing, both public domain and commercial. You are no longer at the mercy of a closed system, but can use "best of breed" applications like MOSAIC.

Integration

As the largest Internet service provider in the world, PSI has an experienced and responsive Customer Support Group available to integrate your computer, whether it's a MAC, PC, SUN, or other computer, into the world-wide web of the Internet. Your computer system will be able to participate in a variety of applications from electronic mail to file transfers to information services.

PSINet and CIX Participation

PSINet, a commercial internetwork with no restrictions on use, is professionally run, and extremely reliable. Through the Commercial Internet Exchange (CIX), commercial internetworking providers are interconnected to provide an internet that is free from any restrictions on commercial usage.

PSI's Network Operations

24 hours/day Network Operations for trouble reporting and dispatch available via a toll-free telephone number.

Multi-megabit Broadband Access

Multi-megabit broadband access makes it possible to access public domain software, databases, and other large files including multimedia documents that are available on the Internet--without disturbing your normal cable TV service.

USENET News

USENET News access, the largest distributed bulletin board service (BBS) in existence, is included with PSICable service.

On our server in the MAN we will provide up to 3 weeks of USENET information on all readily available newsgroups, from *alt.barney* to *comp.sys*. The server will allow any NNTP-based news readers to work with your assigned account. All major MAC and PC TCP/IP software solutions support NNTP-based news readers.

Telecommuting/Cablecommuting

Using PSICable's Individual service for MAN access, you will be able to electronically commute with performance characteristics that blur the distinction of being at home or work.

Electronic Mail

On our server in your metropolitan area we will provide you an electronic mailbox compatible with all major PC and MAC TCP/IP software packages (specifically POP3-supported.)

MAN or Internet Access

You get to choose the level of packet access you need. However, even with "MAN Only" access, you'll be able to have Internet E-Mail and USENET News.

Security

If your organization wants to ensure that your traffic is private, PSI's SecureStream™ will solve the problem.

First IP MAN-only Access $99/Month
First IP Full Internet Access $125/Month
One-Time Set-up Fee $250
Each Additional IP Address $25/Month
Security .....Call

Minimum Commitment .....3 Months

Payment:

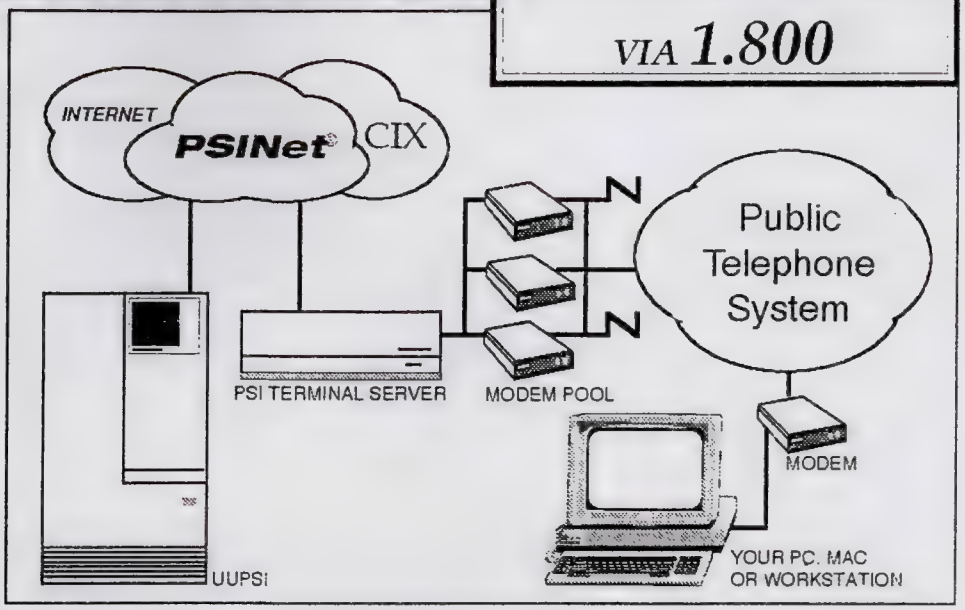
Discover®, VISA®, MasterCard®, or American Express®

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E-Mail: *info@psi.com*

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UUCP UUPSI SM

UUPSI NOW AVAILABLE VIA 1.800



UUPSI SERVICE

UUCP USENET/News and Electronic Mail

HIGHLIGHTS

- Flat Fee
- Customer Support Group
- National Availability
- Local Dialups
- Electronic Mail
- USENET/News Feeds
- Modems and Software Available through PSI
- Internet Anonymous FTP Option Available
- ClariNet Availability

PSI s UUCP USENET/News and Electronic Mail Services through UUPSI provide reliable electronic communications to the individual and corporate user at an inexpensive, fixed rate.

With UUPSI Electronic Mail, mail relayed by a UUPSI (or uu.psi.com) to the customer computer using the UUCP protocol and a standard modem. This capability is commonly included on hundreds of thousands of computers using the UNIX operating system, with software also available for MSDOS, MACOS, VMS, etc.

Both the simplicity of this technology and its common availability keeps the service cost low. The growing number of dialup access points on PSINet® keeps transport costs to a minimum while reliability through the use of dedicated, digital T1 backbone circuits is significantly improved. The availability of high-speed modems at the local dialup access points also increases the efficiency of these services.

PSI will register the customer to receive their own unique Internet domain name at no additional cost and act as an Internet mail forwarded for their computer system(s).

Unlike other networks, there are no additional costs for connection time, quantity of packets, or international access. A fixed, inexpensive fee, which can be budgeted in advance of installation, is the standard for the 90 s.

NATIONAL AVAILABILITY

PSINet is a national internetwork which uses the common networking languages of TCP/IP and OSI to provide service to hundreds of organizations throughout the U.S. and by direct attachment to the NSFNET, the Commercial Internet Exchange (CIX), and other international networks, to tens of thousands of other organizations throughout the globe; this is the global Internet.

Throughout the U.S., PSINet Points-of-Presence (POP) have been deployed with new cities being added. These POPs are co-located in secure facilities, leased from telephone companies and provide privacy, high reliability, direct access to fiber optic infrastructure, and professional on-site maintenance, a unique and unmatched capability.

SUPPORT AND SERVICE

PSI s Network Information and Support Center (NISC) provides 24 hours per day, 7 days per week support, and can be called, toll free, for any network operation problems. In addition, engineers, technicians, and systems administrators are available to assist in the integration of your systems into PSINet.

FEATURES

BENEFITS

◆ **Fast Delivery**	A completed UUPSI Order Form, purchase order (accepted by fax) and PSI credit card validation form (if applicable), can have your news and/or mail connection available in five to seven business days.
◆ **Customer Support Group**	Professionally staffed with seasoned engineers and systems administrators to provide quick customer integration of their facilities and their applications.
◆ **Local Dialups**	No longer do you have to make timed long distance calls; in many cities, a local dialup number is available.
◆ **Flat Fees for Electronic Mail & News**	UUPSI Mail & News option are provided at a fixed price independent of use with no connect time charges.
◆ **USENET/News**	A direct feed from UUPSI, one of the top 50 USENET sites, providing timely access to the largest distributed BBS in existence.
◆ **Compatible UUCP Software and Modems Available through PSI**	For the customer's convenience, compatible UUCP software and high speed modems that support UUPSI may be purchased through PSI.
◆ **POP Infrastructure Integration**	Privacy is assured as your network traffic is not sent through a university or other organization, but through the same system that provides your telephone privacy. With Uninterrupted Power Supply (UPS) and professional telephone company assistance, high reliability is insured.
◆ **PSI's Network Operations**	24 hours/day Network Operations for trouble reporting and dispatch is available via a toll-free telephone number.
◆ **Domain Name**	A domain name will be registered and supported for your computer.
◆ **Internet Anonymous FTP Option**	An additional service of UUPSI, the UUFTP Internet anonymous File Transfer Protocol (FTP) option is available. Anonymous FTP archives of software, both source and binary, documents, images, data sets, etc. throughout the Internet are available through a normal UUCP connection to UUPSI.
◆ **PSINet Participation**	A commercial internetwork with no restrictions on use. Professionally run, extremely reliable, with contractually guaranteed delivery.
◆ **CIX Participation**	Through the Commercial Internet Exchange, commercial U.S. service providers can communicate so that you have no government restrictions on use as with other academic/non-profit networks.
◆ **ClariNet Information Services**	Information on stock prices, to technical and financial news is available through ClariNet, including UPI newswire, DOW and AMEX data. An additional fee to ClariNet Communications Corporation is required.

UUPSI Pricing:

	Registration	Monthly Fee
UUPSI Basic Service (E-mail)	$150	$50
USENET Option	$150	$100
UUFTP Option	$75	Min. of $25*

*($1/Megabyte)

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For further information, please contact:

Performance Systems International, Inc.
510 Huntmar Park Drive
Herndon, VA 22070
Phone: 1 800.82PSI82 or +1 703.709.0300
Fax: +1 703.904.1207 · E-mail: info@psi.com

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UUCP UUPSI℠

FOR PSI INTERNAL USE ONLY
UUPSI℠ ACCT. NAME:
DATE ASSIGNED:
UUPSI℠ PROCESSOR INIT.:

UUCP USENET/NEWS and Mail Order Form

Date: _____

Customer Information:

Company: _____ Dept. _____
Street: _____
P.O. Box/Mail Stop: _____
City: _____ State: _____ Zip: _____
Telephone Number: ( ) _____
Contact: _____

Check the Appropriate Boxes:

- ☐ I want UUCP Mail Service Only.
- ☐ I want Mail and USENET/NEWS Service.
- ☐ I want USENET/NEWS Service (Current SCS Customers Only).

Technical Contact:

Name: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone Number: ( ) _____

Emergency/24 Hr./Off-Hr. Telephone Number: ( ) _____

Fax Number: ( ) _____

Email Address: _____

Configuration Information:

Your computer's UUCP Name (if available): _____

Domain Name (if available): _____

If you do not have a Domain Name, do you want one? Yes ☐ No ☐

Type of Computer System: _____

Type of Modem Protocol (PEP, V.32, 2400, etc.): _____

Company Type (Examples: law firm, bank, individual): _____

Internet Address of the System (if using NNTP): _____

This Agreement is by and between Performance Systems International, Inc., duly authorized and existing under the laws of New York State with its main office at 510 Huntmar Park Drive, Herndon, VA 22070, ("PSI"), and the Customer (as above) for the provision by PSI or its subcontractors of certain electronic communications services.

1. Customer desires an Electronic Mail and/or USENET News feed. Payments received after thirty (30) days will incur a late payment charge of $30.00 per month and after sixty (60) days of non-payment, the account will be terminated. Termination does not remove Customer's responsibility under this Agreement to pay all fees incurred up to the date of termination. This Service may be terminated by Customer at any time upon thirty (30) day's prior written notice. Customer is responsible to pay all fees up to the date of termination of the service, except where PSI is unable to provide services under this Agreement through its own negligence. Notice of termination should be given to "Accounts Receivable, PSI, Inc., P.O. Box 485, Herndon, VA 22070."

2. With respect to the services provided, PSI, Inc. makes no warranties of any kind, whether expressed or implied, including any implied warrantee or merchantability or fitness of this service for a particular purpose. PSI, Inc. takes no responsibility for any damages suffered by Customer, including, but not limited to, loss of data from delays, nondeliveries, misdeliveries, or service interruptions caused by PSI's own negligence or Customer's errors and/or omissions.

3. This service may only be used for lawful purposes. Materials and/or transmission in violation of any local, state or Federal regulation(s) is prohibited. This includes, but is not limited to, copyrighted material, threatening or obscene material, or material protected by trade secret. Customer agrees to indemnify and hold harmless PSI, Inc. from any claims resulting from Customer's use of this service which damages Customer or any third party.

4. Use of any information obtained via this service is at Customer's risk. PSI, Inc. specifically denies any responsibility for the accuracy or quality of information obtained through its services.

5. Use of these services will involve listing Customer's participation in relevant directories.

6. Use of other organization's networks or computing resources are subject to their respective permission and usage policies.

7. PSI, Inc., or other relevant authorities may determine inappropriate usage of this account and the privilege may be revoked at PSI's discretion. Should this occur, Customer will be informed in writing of this action.

8. PSI will occasionally require new registration and account information by Customer to continue this service. In addition, Customer shall notify PSI in writing of any changes in the account information, such as address or computer UUCP name.

9. The anniversary date for this service will be no later than seven (7) calendar days after it's received by PSI systems administration, as work will immediately commence in registration and configuration by PSI staff.

10. This service is to cover network access by the Customer only to any organization, person, etc. through the PSI service, and does not extend to any other person, corporation or entity, including affiliates of the Customer, regardless of their relationship with the Customer. Customer includes all Customer staff and consultants paid by Customer while performing work for Customer.

    As this is a fixed-price service, third party traffic, including packet access and electronic mail, sent from the Customer's facilities or received on behalf of the third party through the PSI service, is expressly forbidden under this Agreement. If USENET News is fed to another organization, no posting from that third party may be sent back through the Customer's connection to PSINet.

    Third party refers to separate non-Customer organizations or individuals using Customer's PSINet connection for transfer of electronic data. It does not refer generally to organizations or individuals sending/receiving data to/from the Customer.

11. PSI, Inc. reserves the right to change the above terms and conditions by notifying Customer in writing at least 30 days in advance of the effective date of the change. Use by Customer after the effective date constitutes acceptance of the new terms and conditions.

12. This Agreement represents the complete agreement and understanding of the parties with respect to the subject matter herein, and supersedes any other agreement or understanding, whether written or oral.

I understand and accept the Terms and Conditions set forth herein and will deliver a legal purchase order or check or Credit Card Validation Form in the amount of $300 per each UUCP Mail Service Only connection for the first quarter (with any ongoing service fees of $150 for each quarter thereafter), or $750 per each Mail and USENET/NEWS Service connection for the first quarter (with any ongoing service fees of $450 for each quarter thereafter) along with this Agreement. The Customer will be billed quarterly for either UUCP Mail Service Only or Mail and USENET/NEWS Service for the appropriate amount prior to that quarter of service. This amount is payable before each quarter of service. Customer may choose to pay all of the yearly costs for mail & news within 15 days of the PSI invoice date, and receive a 10% discount on the annual service fees. Use of either the UUFTP or 1.800 services will result in all service billings to be and on a monthly basis.

Customer Representative

Signature Date

UUCP UUPSI SM

1.800 UUCP UUPSI℠ OPTION

FOR PSI INTERNAL USE ONLY

CURRENT UUPSI I.D.: _____

ASSIGNED U8U I.D. _____

DATE ASSIGNED: _____

CREDIT APPROVED BY: _____

DATE CREDIT APPROVED: _____

1.800 PROCESSOR INIT.: _____

To enable your current UUPSI account for toll-free, 1.800 access, you must complete this form and U.S. Mail it to: PSI, Inc. Attn.: 1.800 UUPSI Option, 510 Huntmar Park Drive, Herndon, VA 22070. Completed forms are also accepted via fax at +1 703.904.1207.

Please print or type the following information:

BILLING ADDRESS:

NAME: _____

ADDRESS: _____

CITY: _____ *STATE:* _____ *ZIP:* _____

E-MAIL: _____ *PHONE:* ( ) _____ *FAX:* ( ) _____

AREA CODE *AREA CODE*

UUPSI ACCOUNT LOGIN NAME: uu _____ *(REQUIRED INFORMATION)*

PLEASE BILL ME THROUGH: ☐ *VISA, DISCOVER, AMERICAN EXPRESS OR MASTERCARD CREDIT CARD INDICATED BELOW.*

☐ *OPEN PURCHASE ORDER NUMBER:* _____ **MUST BE APPROVED BY PSI BUSINESS OFFICE*

☐ ☐ ☐ ☐

NAME AS IT APPEARS ON MY AMERICAN EXPRESS, DISCOVER, MASTERCARD OR VISA:

CARD NUMBER *EXPIRATION DATE*

ADDITIONAL TERMS AND CONDITIONS

1. This contract is an addendum to the PSI UUPSI contract; it does not supersede any terms or conditions of that contract except for payment.
2. UUFTP. PSI UUFTP access is bundled with the 1.800 option. UUFTP, normally $1 per megabyte, is free when used with the 1.800 UUPSI option.
3. 1.800 UUPSI Rates. Customer agrees to pay a one-time registration fee of $75 plus the following usage rates in addition to the normal monthly basic fees*:

Day:	8:00 AM - 8:00 PM (Mon.-Fri.), Eastern	$.20/minute
Evening:	8:00 PM - Midnight (Mon.-Fri.), Eastern	$.15/minute
Night:	Midnight - 8:00 AM (Mon.-Fri.), Eastern	$.12/minute
Weekend:	Midnight Fri. - 8:00 AM Mon., Eastern	$.12/minute

*Rates subject to change

†A minimum of $25 per month of usage rates will be charged.

4. Billing/Payment. Billing for the 1.800 UUPSI option is done on a monthly basis. Payment is due on the 25th day of each month for the preceding month of service, otherwise a 10% per month penalty will be imposed. 1.800 UUPSI option fees will be charged to the Customer's American Express®, Discover®, MasterCard® or VISA® credit card unless alternate billing has been approved.
5. Non-Payment. Non-payment will be grounds for disconnection by PSI of either the Customer's 1.800 UUPSI or normal UUPSI services.
6. Notice. The normal quarterly billing for the other UUPSI capabilities will be moved to monthly at the next appropriate billing cycle.

I understand and accept the above Additional Terms and Conditions as of the date set forth for the 1.800 UUPSI option.

_____

SIGNATURE REQUIRED *DATE*

_____

NAME PRINTED OR TYPED

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UUCP UUPSI SV

UUFTP Option Upgrade Form

FOR PSI INTERNAL USE ONLY
UUFTP I.D. : _____
DATE ASSIGNED: _____
UUFTP PROCESSOR INIT.: _____

To enable your current account for UUPSI UUFTP access, you must complete this form and U.S. Mail it to: PSI, Inc., Attn.: UUFTP Option, Post Office Box 592, Herndon, VA 22070. Completed forms are also accepted via fax at +1 703.904.1207.

Please print or type the following information:

BILLING ADDRESS:

NAME: _____

ADDRESS: _____

CITY: _____ *STATE:* _____ *ZIP:* _____

E-MAIL: _____ *PHONE:* ( ) _____ *FAX:* ( ) _____
AREA CODE AREA CODE

UUPSI ACCOUNT LOGIN NAME: uu _____ *(REQUIRED INFORMATION)*

PLEASE BILL ME THROUGH: ☐ *CREDIT CARD INDICATED BELOW.*

☐ *OPEN PURCHASE ORDER NUMBER:* _____ **PLEASE ATTACH PURCHASE ORDER TO ADDENDUM.*

☐ 

☐ 

☐ 

☐ 

NAME AS IT APPEARS ON MY AMERICAN EXPRESS, DISCOVER, MASTERCARD OR VISA:

_____

_____ _____
CARD NUMBER *EXPIRATION DATE*

ADDITIONAL TERMS AND CONDITIONS

This contract is an addendum to the UUPSI contract; it does not supersede any terms or conditions of that contract.

UUFTP is a service that provides access to anonymous File Transfer Protocol (FTP) archives on the Internet as available and as permitted by various organizations. Performance Systems International, Inc., "PSI", does not warrant the utility of this service nor guarantee its availability to the customer.

The subscriber agrees to pay a one-time registration fee of $75.00 and a recurring $1/Megabyte of data that is made available on the UUPSI server for UUCP'ing to the customer. It will be billed monthly for increments of 100,000 bytes rounded upwards at the end of the month. A minimum of 25 Megabytes will be billed monthly.

Non-payment will be grounds for disconnection of either the UUFTP or General UUPSI service.

_____
SIGNATURE REQUIRED *DATE*

_____
NAME PRINTED OR TYPED

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INTERNET PROVIDER: SPRINTLINK

Company Overview

- SprintLink is an internet access service offering by Sprint.
  - In business for only 2 years
  - Carries 70% of traffic to/from US and the IP market place
  - World's largest public international data network
  - Has four major router locations
    - Stockton, Ca.
    - Washington, D.C.
    - Chicago, Il.
    - Fort Worth, Tx
  - 330 POPS throughout U.S.
  - Uses Sprint fiber network for to carry IP traffic
  - Little commercial use; predominantly educational
  - Relationship with major Internet network providers: NSFnet, NREN (National Research and Educational Network), and International Connections Management (ICM)
    - ICMnet service provides transit between US Internets and foreign national networks
  - Planning to add 5,000 ports/quarter among 4 router locations

SprintLink Service Summary

- Provides dial-up and dedicated Internet access services and support services:
  - Provides SLIP/PPP dial-up access at speeds of 2.4 Kpbs to 38.4 Kpbs
  - Provides TCP/IP dedicated access at speeds of 56 Kpbs to T1.
  - Access via Sprint Frame Relay and SprintNet X.25 networks
  - 24 hour, 7 day/week network operations center
  - Remote (i.e. dial-in) maintenance capability
  - Day credit for any interruption of service
  - Managed router service for customer
    - Network design and engineering
    - Hardware and software configuration management
    - Primary and secondary domain name service
    - Consulting on Internetworking techniques and solutions
  - Internet Services
    - Network news
    - WAIS server
    - Anonymous FTP Server
    - Gopher Server
    - SNMP report capabilities
  - Security
    - SprintLink network under security surveillance
    - Backbone controlled by Defense Data Network Terminal Access Controller System
    - Monitor all supporting systems, i.e. Gopher, News, and Stats servers
    - All terminal access server access is manage by an authentication host

SprintLink Pricing Summary

Port Speed (Kpbs)	Installation Charge	Monthly Recurring Charge	Monthly CPE 1,2,3 yr. pricing
9.6	$660	$500	$389, $237, $186
56/64	$750	$1,000	$389, $237, $186
128	$1,000	$1,300	$522, $302, $229
256	$1,000	$1,500	$522, $302, $229
384	$1,000	$1,700	$522, $302, $229
512	$1,000	$2,000	$522, $302, $229
640	$1,000	$2,400	$522, $302, $229
T1	$1,000	$2,700	$522, $302, $229

CPE cost includes router and DSU/CSU for client site.

SPRINTLINK®

Internetwork between multiple agencies, customers or business partners with SprintLink.

SprintLink gives you the ability to connect multiple local area networks (LANs) among many geographic locations through a router-based wide area network (WAN).

TCP/IP (Transmission Control Protocol/Internet Protocol) has become the protocol of choice for internetworking across dissimilar data processors and multiple networks, allowing easy data transmission between other agencies, customers or business partners. SprintLink, which utilizes TCP/IP- and OSI-based processors, is a router-based, switched network service designed to provide wide area network routing capabilities. Sprint is the first interexchange carrier to provide an internetworking solution utilizing TCP/IP.

SprintLink supports TCP/IP transmissions among LANs that are tied by dedicated lines to backbone and gateway routers via more than 300 Sprint domestic points of presence. This network service is ideal for users with large WANs or users who require connections to other networks. And because SprintLink is a switched service, it's more cost-effective than multiple private lines.

SprintLink is a smart alternative for LAN interconnection that complements Sprint's other data network services.

- A LAN networking alternative for TCP/IP users.
- Access ports of 9.6 kbps (digital), 56 kbps, Fractional T1 and T1.
- Perfect for inter-company or inter-agency communication.
- Excellent for multi-network and multi-vendor hardware connectivity.

As a SprintLink customer, you'll also enjoy special connections.

For users meeting the federal government's acceptable use requirements, SprintLink's TCP/IP architecture provides a convenient gateway to Internet, the international WAN that links thousands of academic, government and non-profit networks in 81 countries.

Sprint®

SPRINTLINK®

SprintLink customers can also connect to Commercial Internet Exchange (CIX) members. CIX is a cooperative effort among public data internetwork service providers to promote IP-based networking infrastructure. CIX members include CERFnet, Performance Systems International, UUNET Technologies, Bay Area Research Network and more than a dozen other commercial internet service providers.

Sprint handles all trouble-shooting and problem resolution.

Sprint is your single source for trouble reporting, network management and problem resolution. We'll help you identify and resolve problems with addressing and routing as well as with circuitry and hardware. All other IP network service providers rely on outside vendors to resolve physical circuit problems, but we use our own technicians for both installation and maintenance of customer premises equipment.

These services are also available to you:

- Integrated T1 access capability
- Access via Sprint's frame relay network
- Primary and secondary domain name service
- Network news
- Network management reports

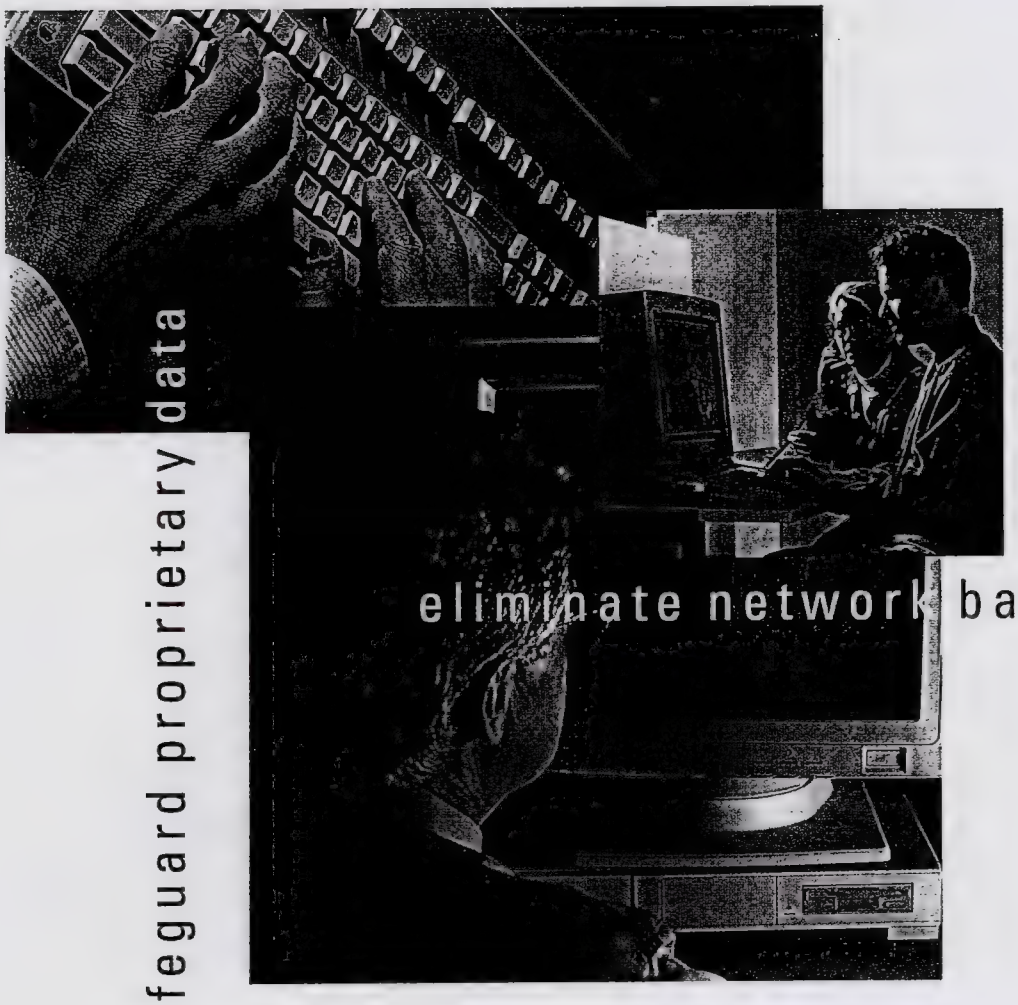
These services are planned for availability to SprintLink customers:

- International connectivity
- OSI connectivity
- Routing at speeds up to 45 Mbps
- 800 number-based dial-in capability

Sprint®

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3818-8 11/93

The projects committee of an international research consortium sees information sharing among diverse networks as the surest pathway to progress. The question is, how? **SprintLink PLUS.**

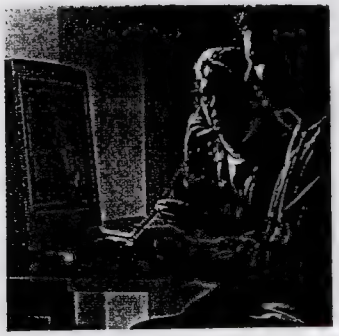


safeguard proprietary data

eliminate network barriers

Sprint®

An international trade association charged with drafting an industry standards document connected key members located in different states via their own computers using SprintLink PLUS℠. This multimedia environment allowed drafting, editing and document review functions to be coordinated among dozens, even hundreds, of participants without regard to time, distance or computer type.



e n h a n c

Imagine the possibilities: a world of information right at your fingertips, the ability to join forces with virtually anyone, anywhere – and the capability to safeguard proprietary information. All without building a private data network.

Sprint can show you the way... now.

Advanced information sharing technology is no longer the exclusive domain of the privileged few. Now it's possible to tap into the Internet and use it as a powerful productivity-enhancing tool. SprintLink PLUS, which combines Sprint's TCP/IP internetworking solution with ElNet technologies, is the key.

In addition to opening the door to a wealth of valuable information, SprintLink PLUS gives you the capability to turn your database into a revenue-generating profit center. It empowers you to instantly band together individuals, departments, even companies, to rapidly respond to emerging market opportunities without creating new data networks for each relationship. It eliminates barriers between networks. And it provides a secured environment that gives you complete control over how much of your information users can access.

By serving as an extension of your own computing environment, SprintLink PLUS helps you know, share and accomplish more than ever before possible. In fact, the possibilities are endless.

Get "there" faster, easier, more securely with the amazing new capabilities Sprint offers:

- Easy-to-use directory services to help you find the information you need, quickly.
- Security features that allow you to define access control parameters.

And soon:

- Advanced electronic-mail services for secure text and multi-media communications.
- Financial settlement services for electronic payment for goods and services.

SprintLink PLUS represents a true technological breakthrough, one that opens the door to a bold new era of information management.

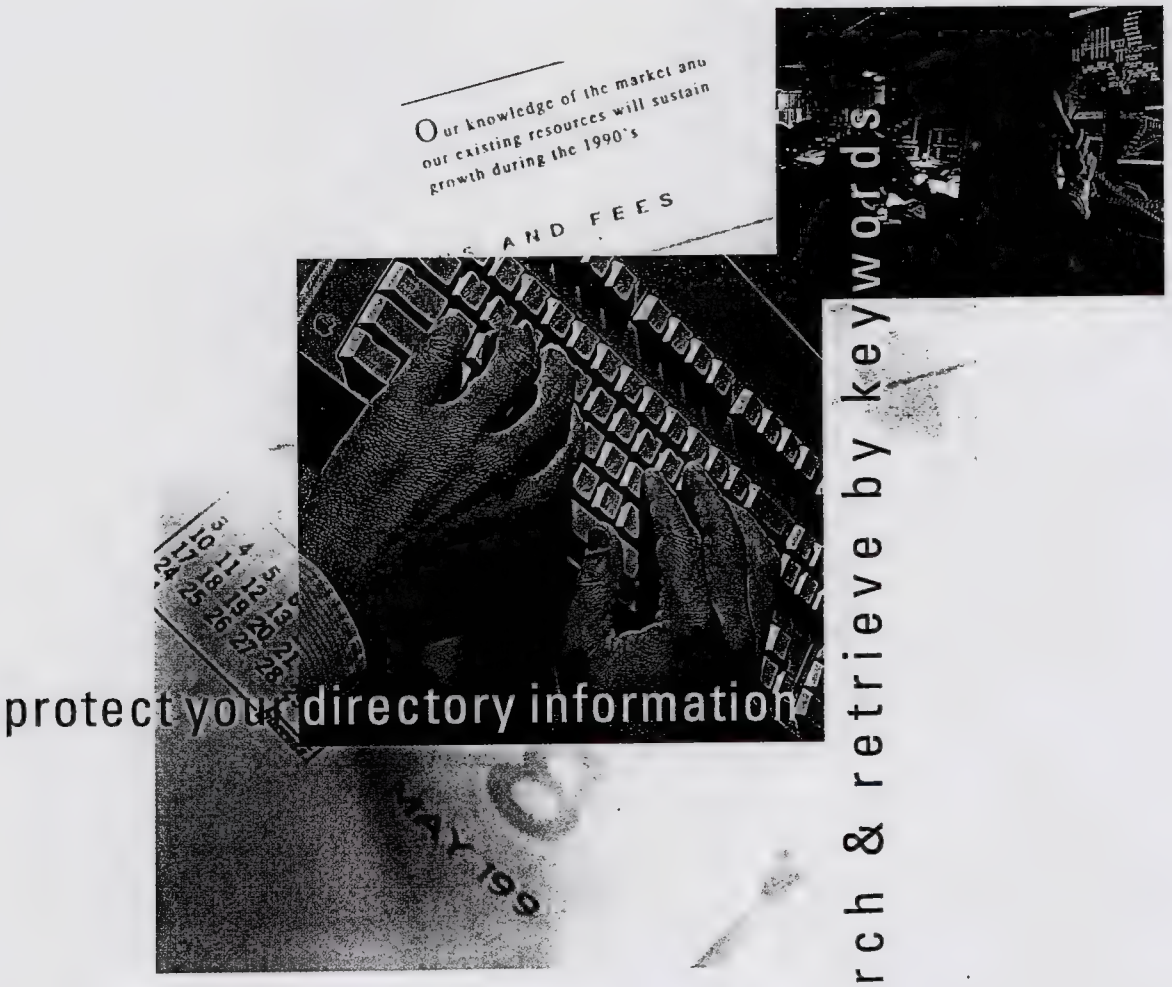
- **Information database services**
- **Protocol/language conversion services**
- **On-line product catalogs and data sheets**
- **Product support and distribution services**
- **Collaborative engineering and design services**
- **Electronic bid and quote posting**
- **User group information-sharing**
- **Bulletin board services**

No special user interface is required other than your own computer.

- **UNIX workstation**
- **IBM PC with Windows™ 3.1**
- **Macintosh**

ElNet™

A project manager asks, "What good is a vast information network if it takes hours to find the information I need?" This good question has an equally good answer: **SprintLink PLUS Directory Services.**



Sprint®

A consortium of electronic designers and manufacturers can now gain instant access to the latest component libraries. With SprintLink PLUS℠, information can be sorted and filtered on-the-fly by type, manufacturer, speed and cost. In addition, a host of data formats – for designing, drafting, layout creation and technical editing – can be accessed transparently.

Looking for industry-specific information? Services? Companies? Personnel in the electronic mark



Sprint announces the end of searching through miles of files for information and resources. Now, powerful, innovative SprintLink PLUS Directory Services make it possible to "look up" information in an integrated data network environment as easily as flipping through a phone book. An easy-to-use graphical user interface serves as a flexible and powerful gateway to SprintLink PLUS Directory Services, making it possible to seamlessly integrate local systems with wide area networks. And, you can do all this from your UNIX, IBM PC or Macintosh host.

Need an article, but don't know the title? SprintLink PLUS knows where to look.

The SprintLink PLUS content-based directory is a powerful information retrieval system that works like an electron ic "yellow pages" to allow you to search for and retrieve a variety of information by using simple keywords, phrases or questions. Electronic hot-links between related information sources allows you to easily locate information about organizations, individuals and computing resources, catalogs, government information resources, business leads, industry-specific bulletin boards, technical literatu and other resources contained in the globa directory.

Protect your di



Pinpoint virtually any topic in seconds.

- Agriculture
- Arts & Humanities
- Biosciences
- Computers
- Economics
- Engineering
- Environment
- Internet Cyberspace
- Library Information & Catalogs
- Medicine
- Religion & Philosophy
- and thousands more

lace? Easy-to-use SprintLink PLUS Directory Services can get you there... now.

What could be easier?

Canvass thousands of books, journals, magazines, newsletters, technical reports and publications for the information you're after – instantly. SprintLink PLUS Directory Services is the solution that can cross all major information barriers to accomplish the job.

You can also protect your directory information from browsers.

SprintLink PLUS Directory Services also allows you to safeguard proprietary directory and other information against unauthorized access. You decide on a need-to-know basis precisely who can browse your information sources – including for-cost resources – and access and retrieve your documents or use other services. SprintLink PLUS gives you complete control.

Already know where to find what you need?

You'll appreciate SprintLink PLUS' new rapid-access location-based directory. It's more like the "white pages," with information arranged in an easy-to-navigate, hierarchical "tree." Use it to determine how to access a network service, look up phone numbers and electronic-mail addresses by quickly going straight to the source.

Your network resources are only as good as your ability to access the information. Talk to your Sprint representative today to find out how to be there... now.

ctory information

With SprintLink PLUS Directory Services, the information you need is as good as found.

Based on today's most advanced technologies.

- Wide Area Information Services (WAIS)
- Telnet
- World Wide Web (WWW)
- Gopher
- File Transfer Protocol (PTP)

ELNet™

SprintLink PLUS℠ is an ELNet™ compatible service.

Powerful open network information-sharing capabilities right now. A platform designed for amazing future capabilities. Take a look at how **SprintLink PLUS** will affect our world.



Sprint®

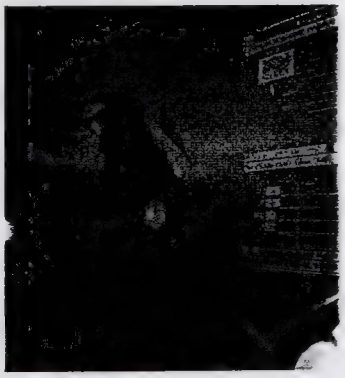
ELNet™

SprintLink PLUS℠ is an ELNet™ compatible service.

Major national manufacturing associations will soon have the capability to connect their private data networks with manufacturing application and education centers or teaching factories – anywhere in the world.

With hundreds of members, many of which are large corporations, an association's data network will deploy today's leading manufacturing technologies into small and medium-sized manufacturing concerns. Eventually, the network can use multimedia technologies to provide virtual teleconferencing, real-time video feeds, video mail, voice-based documents and interactive computer-based training and education. And that's only a hint of things to come.

A CAD drawing might be sent by electronic mail to reviewers with video commentaries from a private forum of engineers. When the drawing is completed and distributed, a video tutorial can accompany it.



Computer workstations will soon become multimedia centers.
In addition to a variety of advanced electronic-mail services already available through SprintLink PLUS℠, planning for additional services is underway, including content encryption services that also authenticate both sender and receiver. Coming soon, the ability to communicate not only in text, but also in voice and video. Plus audio- and graphics-based mail communications and automated mail readers for multimedia messages.

Emerging financial settlement capabilities will make the SprintLink PLUS open data network even more valuable. In the very near future, when users request documents for a fee, information on means of payment can be provided before the documents are even downloaded.

A whole new way to pay.

- **Electronic checks**
- **Credit cards**
- **Letters of credit**

SprintLink PLUS gives you an edge in planning for the future:

- **Integrated Service Digital Network (ISDN)**
- **Frame Relay high-speed network**
- **Asynchronous Transfer Mode (ATM)**
- **Advanced teleconferencing**
- **Applications using Electronic Data Interchange (EDI)**

There's no need to wait to gain the advantages SprintLink PLUS℠ offers: Sophisticated open-network information-sharing today, and an endless world of possibilities tomorrow. Be there...now.

Sprint®

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ELNet is a trademark of the Microelectronics and Computer Technology Corporation (MCC).

video audio text

What about reliability? How do I train users? What if I need help? **SprintLink PLUS** guaranteed personal attention – day or night.



Sprint®

ELNet™

SprintLink PLUS℠ is an ELNet™ compatible service.

SprintLink PLUS℠ subscribers are assured the highest levels of round-the-clock network management and customer service support.

Leave the details to Sprint.

- **Monitoring of all connections 24 hours a day, seven days a week**
- **Real-time, graphic-oriented management of routers and associated communications links**
- **Remote problem diagnostics and configuration management**
- **Isolation and resolution of potential problems as soon as they're identified**



One-stop shopping: Everything you need to get "on-line"

- Complete consultation services
- "Tell your users" communications recommendations
- "Teach your users to use your service" training
- Trusted intermediary to manage your access database for you
- Reliable backup sites
- Access via your own computer (UNIX-based workstations, Macintosh or IBM PC)

SprintLink PLUS Help Desk

Questions? Troubleshooting? Service? Call or fax 24 hours a day, seven days a week to access the help you need.

Network management Service

A variety of protocols and services for basic functions

- **File Transfer Protocol (FTP)**
- **Telnet**
- **Simple Mail Transfer Protocol (SMTP)**
- **Internet Relay Chat (IRC)**
- **Bulletin boards and news**

Build an electronic marketplace of unlimited scope.

- **Goods and services offered by SprintLink® participants cut across industry domains**
- **Include manufacturing, health care, retail, financial services, power industry and government**
- **Providers of each can be accessed spontaneously, and entirely electronically**

Sprint®

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SPRINTLINK PRICING

Sprint.

PORT SPEED (KBPS)	MONTHLY RECURRING CHARGE (MRC)	INSTALLATION CHARGE	MONTHLY CPE $ (1, 2, 3 YR. PRICING)
9.6	500	660	389, 237, 186
56 / 64	1,000	750	389, 237, 186
128	1,300	1,000	522 , 302, 229
256	1,500	1,000	522 , 302, 229
384	1,700	1,000	522 , 302, 229
512	2,000	1,000	522 , 302, 229
640	2,400	1,000	522 , 302, 229
T-1	2,700	1,000	522 , 302, 229

DISCOUNTS AVAILABLE WITH TERM OR VOLUME COMMITMENTS

THE FIRST CHARGE IS A MONTHLY PORT FEE AND IS A FLAT RATE, THERE IS NOT A PACKET CHARGE AND IT IS BASED ON PORT SPEED. THE SECOND CHARGE IS FOR INSTALLATION OF THE SPRINTLINK PORT. THE THIRD AMOUNT IS FOR THE CUSTOMER PREMISE EQUIPMENT (CPE) WHICH CONSISTS OF A CISCO ROUTER AND A CSU/DSU. THE THREE DIFFERENT PRICES ARE FROM HIGHEST TO LOWEST FOR 1, 2 AND 3 YR. TERM PRICES RESPECTIVELY. FOR INSTANCE TO LEASE THE ROUTER AND CSU/DSU FOR A 3 YR. T-1 CONNECTION , THE EQUIPMENT WOULD BE A MONTHLY LEASE OF $229. IF YOU JUST LEASE THE CSU / DSU FROM US AND PURCHASE THE ROUTER YOURSELF, THE LEASE WOULD BE $50 A MONTH FOR A 56K CONNECTION AND $183, $115 OR $93 A MONTH (1,2 & 3 YR. PRICING) LEASE FOR EVERY CONNECTION FROM 128K ON UP.

THE ABOVE PRICES DO NOT REFLECT THE LOCAL LOOP CHARGES TO CONNECT TO OUR POP. SPRINT HAS OVER 320+ POPS IN THE U.S.

MISCELLANEOUS CHARGES

A) **Service Modifications**

Installation Unit Price

1) - Access line upgrade to higher speed — Standard installation per Sprint Tariff
- Downgrade to a lower speed — Standard installation per Sprint Tariff
- Location move within the same build. — Standard installation per Sprint Tariff
- Location move to another building — Standard installation per Sprint Tariff

2) Access Port

-Upgrade to higher speed = $250
- Downgrade to lower speed = $250
- Move to another Sprint POP = $250

Sprint

TERMS AND CONDITIONS

The Following terms and conditions govern Sprint's provision of SprintLink Products and Services ("Products and Services") to Customer. The Term "Products and Services" is limited to the equipment, facilities, programming or software provided by Sprint to facilitate SprintLink Services but does not include special access lines which may be utilized with the SprintLink Services. If Products and Services are or become subject to a tariff filed with the Federal Communications Commission or any other regulatory institution ("Tariff"), the terms and conditions of such Tariff, including rates, shall govern Customer's use of the Products and Services.

1. Term

The initial Term begins on the first day of the month following Sprint's installation of equipment of facilities, or acceptance of previously installed equipment or facilities, according to Sprint's then current policy. The Term for Products and Services ("Term") will be stated on the SprintLink Order for Data Communications Services ("Order") and shall automatically renew for successive ninety (90) day Terms, regardless of the Term of the original Order, unless (1) Customer or Sprint notifies the other by thirty (30) days written notice that it does not wish to renew, or (2) Customer renews a long-term Order for the same or a different Term by executing a new Order no less than thirty (30) days prior to the end of the current Term, or (3) Customer converts an automatic renewal Term to a Long-Term Order by executing a new Order. A "Long-Term" Order is one whose Term is one year or longer.

2. Rates

Rates are as set forth on Customer's Order, Sprint will provide sixty (60) days' written notice of increase in base prices. In the event of increases in base prices, Customer has Fourteen (14) days from the date of the effective increase to provide Sprint Contracts Administration with a written request to terminate service and incur no termination liability. Otherwise, Customer's existing Orders will be billed according to the new base prices. Customer will be responsible for all charges for up to thirty (30) days from the date notice is received.

Discount percentages, if applicable, are fixed for Long-Term Orders. For all other Orders and upon renewal of Long-Term Orders, the discount percentage(s) are subject to change upon sixty (60) days prior written notice.

3. Payment

Customer agrees to pay all charges incurred. Charges shall be invoiced monthly and payment in US currency shall be due upon receipt. Interest charges of 1 3/4 percent per month or the highest rate permitted by law will accrue daily on all amounts not paid within thirty (30) days of the date of the invoice. Customer will pay all sales and use taxes, as well as duties or levies, on Products and Services. Customer agrees to pay all charges according to Sprint's then current Cancel Before start Policy and Billing Initiation Policy.

4. Termination

To terminate Products and Services, Customer must provide Sprint with thirty (30) days prior written notice. In the event of early termination of any Long-Term Order, Customer will pay a lump sum equal to one hundred percent (100%) of the monthly base price for each service terminated for the unexpired portion of the Term's first year plus fifty percent (50%) of the monthly base price for each service terminated for each month remaining in the Term. Customer will not be liable for termination charges if Products and Services of the same or greater monthly base price and term is ordered at the same time as the notice of termination is received.



5. Rights and Obligations of Customer

A. Customer shall at its own expense provide all necessary preparations required to comply with Sprint's installation and maintenance specifications, shall be responsible for the costs of relocation of Products and Services once installed by Sprint, and shall provide to Sprint and to suppliers of communications lines reasonable access to Customer's premises to perform any acts required by this Agreement.

B. Customer shall properly use equipment provided by Sprint and shall surrender the equipment to Sprint upon termination. Customer shall be liable for damages to Products and Services caused by the negligence or willful acts of Customer's officers, employees, agents or contractors for loss through theft or vandalism of Products and Services on Customer's premises, and for damages caused by the use of equipment or supplies not provided by Sprint.

C. Customer shall neither permit or assist others to use Products and Services for any purpose other than that for which they are intended; fail to maintain a suitable environment as specified by Sprint; or alter, tamper with, adjust or repair the Products and Services. In the event of such alterations, tampering, adjustments or repairs by Customer, Sprint shall be completely released from any liability or obligation (including any warranty or indemnity obligation) to Customer relative to the Products and Services; and Customer shall be liable to Sprint for costs or damages incurred by Sprint.

D. Customer shall not nor shall it permit or assist others to abuse or fraudulently use Products and Services, including but not limited to the following:

1. Obtaining or attempting to obtain service by any fraudulent means or device with intent to avoid payment;

2. Accessing, altering, or destroying any information of another Sprint Customer by any fraudulent means or device, or attempting to do so; or

3. Using Products and Services so as to interfere with the use of the Sprint network by other customers or authorized users; or in violation of the law or in aid of any unlawful act.

6. Equipment or Software not Provided by Sprint

A. Sprint shall not be responsible for the installation, operation or maintenance of equipment or software not provided by Sprint; nor shall Sprint be responsible for the transmission or reception of information by equipment or software not provided by Sprint.

B. Customer shall be responsible for the use and compatibility of equipment or software not provided by Sprint. In the event that Customer uses equipment or software not provided by Sprint which impairs the Customer's use of Products and Services, Customer shall nonetheless be liable for payment for Products and Services. Upon notice from Sprint that the equipment or software not provided by Sprint is causing or is likely to cause hazard, interferences or service obstruction, Customer shall eliminate the likelihood of hazard, interference or service obstruction. Customer shall if necessary pay Sprint to troubleshoot difficulties caused by equipment or software not provided by Sprint.



C. Sprint shall not be responsible if any changes in Products and Services cause equipment or hardware not provided by Sprint to become obsolete, require modification or alteration, or otherwise affect performance of equipment or hardware not provided by Sprint.

D. The following terms apply specifically to scenarios where the customer provides the router that will interface to SprintLink. Sprint includes the terms and conditions so that Sprint can control the performance of SprintLink on an end-to-end basis and protect the SprintLink network. Sprint's intent is to manage the router on a cooperative basis with the customer.

1. Sprint reserves the right to allow or refuse the make, model and or software revision of customer-provided router to be used as the gateway to SprintLink.

2. Sprint and the customer will cooperatively set the initial configuration for the router's interface into SprintLink.

3. The customer must permit Sprint to access the router's SNMP variables, and the customer must, at Sprint's request, permit one or more Sprint network management systems to be the recipient of SNMP TRAP messages.

4. The customer must offer Sprint read/write access to the router's configuration tables. Either the customer or Sprint can administer the access controls (i.e., login and password) to the router's configuration editor. Sprint will only modify that part of the router's configuration which controls the interface into the SprintLink network.

7. Rights and Obligations of Sprint

A. Sprint shall install, operate and maintain Products and Services. Sprint shall not be responsible for cabling that connects equipment not provided by Sprint to Sprint Products and Services.

B. Sprint warrants that Products and Services will be in good working order and will conform to Sprint's service specifications upon the date installed.

THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

C. Customer's sole remedy for performance or non-performance of Products and Services pursuant to Sprint's service specifications shall be repair or replacement of the Products and Services.

D. Sprint shall not be liable, either in contract or in tort, for protection from unauthorized access of Customer's transmission facilities or Customer premise equipment; or for unauthorized access to or alteration, theft or destruction of Customer's data files, programs, procedure or information through accident, fraudulent means or devices, or any other method, even should such access occurs as a result of Sprint's negligence.



E. Sprint shall not be liable for claims or damages caused by Customer's fault, negligence or failure to perform Customer's responsibilities; claims against Customer by any other party; any act or omission of any other party furnishing products or services; or installation or removal of equipment furnished by any service provider or Sprint, except where caused by the gross negligence of Sprint.

F. For any other claim, Customer's damages, if any, shall be limited to those actually proven as directly attributable to Sprint, subject to the following limitation: Sprint will not be liable under any circumstances for any lost profits or other consequential damages, even if Sprint has been advised of the possibility of such damages. Sprint's liability for damages to Customer for any cause whatsoever, regardless of the form of action, and whether in contract or in tort, including negligence, shall be limited to the lesser of $100,000 or the monthly charges paid for Products and Services from the date damages were incurred, but in no event more than twelve (12) month's charges for the Products and Services that cause the damage

G. Upon default by Customer, Sprint may terminate Products and Services and retake possession of Products and Services (before, during or after action to recover sums hereunder), in which case Customer shall provide Sprint full and free access to Products and Services for this purpose, retain all payments made hereunder, and recover charges and costs owed by Customer as well as any other damages Sprint may have sustained because of Customer's default.

"Default" shall mean where Customer becomes subject of a voluntary or involuntary bankruptcy, insolvency, reorganization or liquidation proceeding; makes an assignment for the benefit of creditors; admits in writing its inability to pay debts when due; or fails within ten (10) days after written notice to remedy any breach of these Terms and Conditions.

8. Proprietary Rights and Information Protection

A. Where Customer utilizes Products and Services containing programming or software. Sprint grants to Customer a non-exclusive and non-transferable license to use such programming or software for the sole purpose of enabling Customer to use such Products and Services.

B. Title and property rights including all intellectual property rights to Products and Services are and shall remain with Sprint, whether or not embedded in the programming or software.

C. Customer recognizes that Products and Services, programming and software used hereunder constitute valuable trade secrets of Sprint. Customer shall use its best efforts to protect and keep confidential all programming and software used by it and shall make no attempt to examine, copy, alter, ""reverse" engineer," tamper with, or otherwise misuse such Products and Services programming and software.

9. Indemnities

A. If promptly notified in writing of any action brought against Customer based on a claim that Products and Services used by Customer infringes a United States patent or copyright, Sprint will defend such action at its expense and will pay any and all fees, costs or damages that may be finally awarded in such action or resulting settlement. In the event that a final injunction is obtained against Customer prohibiting use of Products and Services of any part thereby by reason of infringement of a United States patent or copyright, Sprint will at its option either:



1. At its expense, procure the right for Customer to continue using the Products and Services: or

2. Procure alternative Products and Services which furnish the same or similar functionality; or

3. Direct Customer to return such Products and Services to Sprint at Sprint's expense, and in such event, the Order relating to such returned Products and Services shall terminate and any prepaid charges will be refunded to Customer.

B. Sprint will be indemnified and saved harmless by the Customer from and against all loss, liability, damage and expense, including reasonable counsel fees, caused by:

1. Negligent acts or omissions of officers, employees, agents or contractors of Customer which arise out of or are caused by the construction, installation, maintenance, presence, use or removal of systems, channels or terminal equipment or software not provided by Sprint which are connected or are to be connected to Sprint Products and Services and which result in claims and demands for damages to property or for injury or death to persons including payments made under any Worker's Compensation Law or under any plan for employee's disability or death benefits:

2. Claims for liable, slander, invasion of privacy of infringement of copyright, and invasion and/or alteration of private records or data arising from any information, data or message transmitted over the network by Customer, and

3. Claims for infringement of patents arising from the use of equipment and software, apparatus and systems not provided by Sprint in connection with Products and Services.

10. General

A. Customer shall not assign or transfer the Order without the prior written consent of Sprint. Sprint may however assign this Agreement to its parent company or an affiliate with 30 days notice.

B. Sprint will not be responsible for performance of its obligations hereunder where delayed or hindered by war, riots, embargoes, strikes or other concealed acts of workmen (whether of Sprint or others), casualties, accidents or other occurrences beyond Sprint's control Sprint shall notify Customer in the event of any of the foregoing occurrences. Should such occurrence continue for more than sixty (60) days, Sprint or Customer may cancel the Order for the affected Products and Services with no further liability.

C. The provision of Products and Services by Sprint is subject to Sprint's continuing approval of Customer's credit-worthiness. Customer shall furnish financial information as Sprint may from time to time request to determine Customer's credit-worthiness.



D. Any legal action arising out of failure, malfunction or defect in Products and Services shall be brought within one (1) year of the occurrence or is deemed waived.

E. These Terms and Conditions may not be modified except by written amendment by the parties. No agent, employee or representative of Sprint or Customer has authority to bind the parties to any representation or warranty unless such is specifically included in these Terms and Conditions, the Order, or written amendments thereto.

F. Notice to the parties of disputes arising under this Agreement shall be sent by registered mail to the parties to the address shown on the most recent Order. All other notices may be sent by regular mail. Notice to Sprint shall be to:

Sprint
13221 Woodland Park Road
Herndon, Virginia 22071
Attention: Contracts Administration

G. All orders subject to Acceptable Use Policy attached to this Agreement.

H. This Agreement shall be governed by the laws of the State of Kansas.



NSFNET ACCEPTABLE USE POLICY

The purpose of NSFNET is to support research and other scholarly activities in the US by providing access to unique resources and the opportunity for collaborative work.

This statement represents a guide to the acceptable use of the NSFNET backbone. It is only intended to address the issue of use of the backbone. It is expected that the various mid-level networks will formulate their own use polices for traffic that will not traverse the backbone.

(1) All use must be consistent with the purposes of NSFNET.

(2) The intent of this policy is to make clear certain uses which are consistent with the purposes of NSFNET, not to exhaustively enumerate all such possible uses.

(3) The NSF NSFNET Project Office may at any time make determinations that particular uses are or are not consistent with the purposes of NSFNET. Such determinations will be reported to the NSF Networking and Research and Infrastructure Division Advisory Panel and to the user community.

(4) If a use is consistent with the purposes of NSFNET, then activities in direct support of that use will be considered consistent with the purposes of NSFNET. For example, administrative communications for the support infrastructure needed for research and instruction are acceptable.

(5) Use in support of research or instruction at not-for-profit institutions of research or instruction in the United States is acceptable.

(6) Use for a project which is part of or supports a research or instruction activity for a not-for-profit institution of research or instruction in the United States is acceptable, even if any or all parties to the use are located or employed elsewhere. For example, communications directly between industrial affiliates engaged in support of a project for such an institution is acceptable.

(7) Use for commercial activities by for-profit institutions of research or instruction in the United States is acceptable.

(8) Use for research or instruction at for-profit institutions may or may not be consistent with the purposes of NSFNET, and will be reviewed by the NSF Project Office on a case-by-case basis.

INTERNET ACCESS SERVICE

International Connections Manager Service

- World's largest public international data network
- Cooperative Agreement for International Connections Management (ICM) between the National Science Foundation (NSF) and Sprint
- Contracts with foreign Public Data Internets
- ICMnet service provides transit between US Internets and foreign national networks
- ICMnet service also provides some transit among some foreign networks

International Connections Manager Service
(continued)

1. EBONE - London	T1
2. EBONE - Paris	T1
3. EBONE - Stockholm	T1(Upgrade to E1 in process)
4. EBONE - Bonn	512 kbps
5. UNINET-ZA (South Africa)	64 kbps
6. Kuwait	56 kbps
7. TURBITAK (Turkey)	64 kbps
8. CRnet (Costa Rica)	64 kbps
9. ECUAnet (Ecuador)	64 kbps
10. Russia	64 kbps
11. SoftNet (India)	64 kbps
12. NICnet (India)	64 kbps
13. UK Demonet	64 kbps
14. Technet (Mexico)	T1
15. SINET (Japan)	512 kbps
16 MITI (Japan)	512 kbps
17. Japanese Internet Initiative	192 kbps
18. Japanese Information Center for Science & Technology	512 kbps
19. MIMOS (Malaysia)	64 kbps
20. Calpurnia (Canada)	64 kbps

SprintLink
Public Data Internet

- Public Internet Access Service
- LAN to LAN routing
- Service operational since 7/92
- Private Line Access: 9.6/19.2kbps analog
  56/64 kbps - T3
- Pricing is distance insensitive
- Flat monthly rate (function of access line speed)
- Commercial (CO) Internet Access
- Research and Education (R&E) Internet access
- Access via Sprint Frame Relay and SprintNet X.25 networks
- Network News

Network Information Service Center (NISC)

WAIS Server

Anonymous FTP Server

Network Documentation (Customer Handbooks, Equipment Guides)

Gopher Server

Planned Features: Dial-up via SprintNet

Dial-up via 800 (Currently in Beta. Max speed 34.8 kbps)

OSI Intermediate System - Intermediate System

OSI End System - Intermediate System

Routing Database

ATM Access & Transport 1Q94

Network Operations Center:

24 x 7 Coverage
SunNet Manager, HP Openview
Ability to troubleshoot physical and routing problems realtime

Statistics:

(per SprintLink customer access line)

Availability
Utilization
Errors

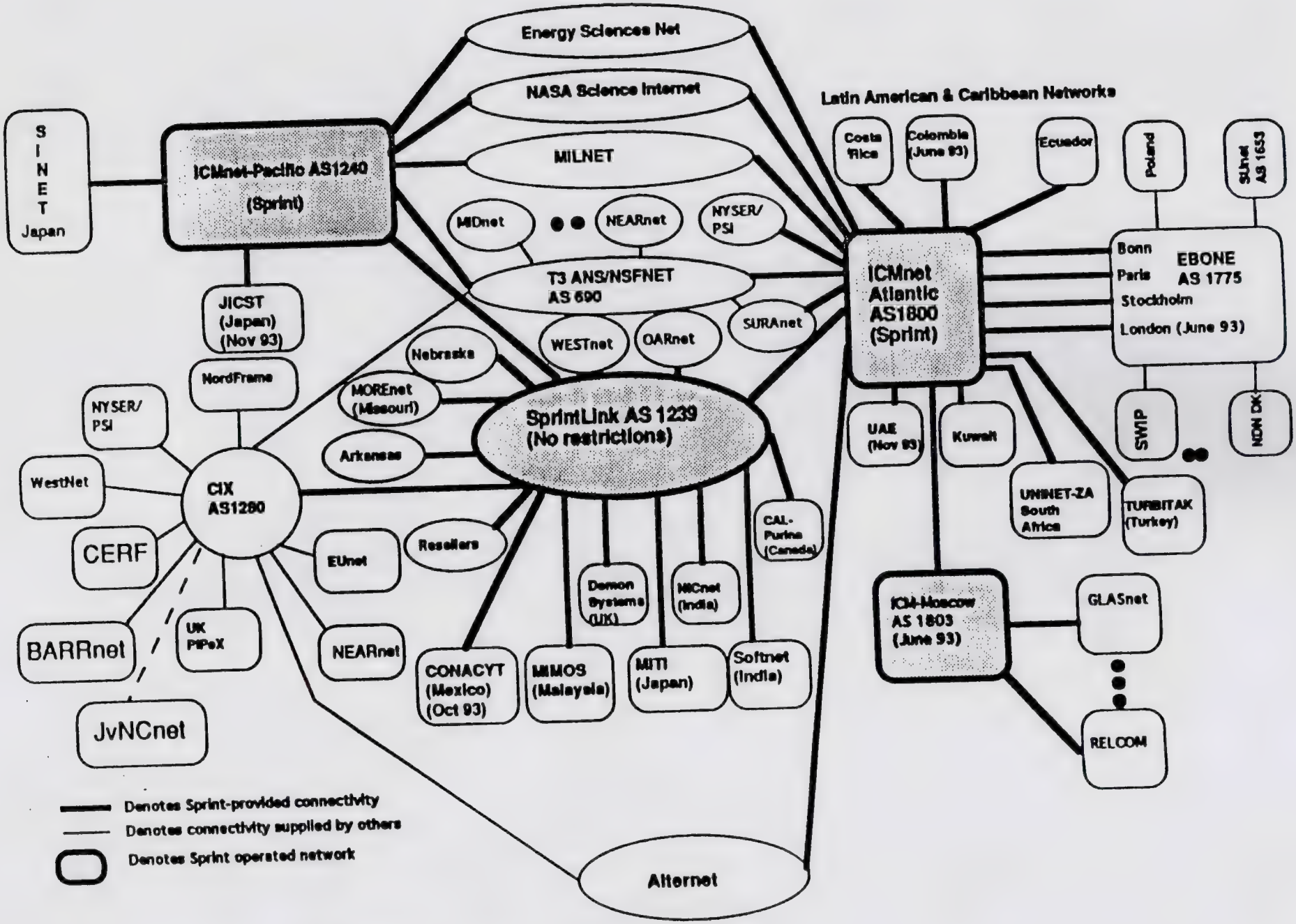
Protocols:

Interior Gateway Protocols:

- BGP-3
- Cisco IGRP (OSPF in 2Q93, IS-IS 4Q93))

Exterior Gateway Protocols:

- BGP-3 (BGP-4 in 3Q93)
- EGP



Sprint Networks Transit Routing Relationships

Managed Router Networks

Routers:

- Cisco
- Wellfleet

Transport:

- Private Line
- X.25
- Frame Relay
- ATM (planned)

Operations:

- Same coverage as SprintLink PDI

Managed Router Network Group Capabilities

- Provide Customers with Network Design and Engineering
- Configuration Management of Hardware and Software
- Obtain NIC Address and Domains (possible ASN)
- Coordinate Namespace Plan with Customer
- Provide Secondary Domain Name Server Service
- Pro-active Monitoring of Network for Outages
- Diagnose Network Problems and Provide Solutions
- Provide Security to Network Through Password Control of Routers
- Provide Network Statistics and Reports
- Security Analysis Through the Use of Network Monitors

Managed Router Network Group Capabilities (continued)

- Consulting on Internetworking Techniques and Solutions
- Implement new/different Routing Protocols
- Analyze and Implement Multi-Protocol Routing Strategies
- Consult on IP Route Filtering Implementations

Dial-Up Service

- SLIP, PPP and Interactive Capability
- Xylogics Annex 3 Terminal Servers
- Fully Integrated with Sprint's 800 Service
- Oriented towards corporate and network market
- Speed: 2.4 kbps - 38.4 kbps

SECURITY

- All SprintLink network components are under security.
- Implemented the Defense Data Network (DDN) Terminal Access Controller System (TACACS) to control access to backbone and customer premise routers.
- We also monitor access into ALL supporting systems, to include Gopher Server, News Server, and Stats Servers.
- All terminal server access is managed by a authentication host which has a fully operable back-up system.

1.0 Introduction

This Handbook contains the information necessary for SprintLink customers to properly establish Internet connectivity, submit changes, and resolve troubles. Distribution of this document is limited to customers and prospective customers. Any comments or suggestions for improvement should be sent to Patricia Kendall (Internet: Patricia.A.Kendall@sprint.sprint.com or SprintMail: P.Kendall).

2.0 SprintLink Description

The SprintLink Public Data Internet provides users and peer networks throughout the world a variety of services. For users, SprintLink provides access to the global Internet. For peer networks, SprintLink provides transit to other peer networks and access to SprintLink customers. A user is defined as a firm, institution or individual. A peer network is a network which provides public service to users. Examples of peer networks include Alternet, ANS, Morenet (Missouri), and WESTnet.

The internconnection topology and procedures of the thousands of networks that comprise the Internet thorughout the world is very complex and unfortunately impacts all users. SprintLink shields the user from much of the complexity.

The following briefly describes Sprint's Internet infrastructure. An understanding of Sprint's Internet services architecture and how it relates to the balance of the Internet is useful and will facilitate relations between Sprint and the customer.

Sprint operates four Internet networks: International Connections Manager Network (ICMnet)-Atlantic, ICMnet-Pacific, ICMnet-Moscow and SprintLink. The ICMnets provide international routing services under a cooperative agreement with the US National Science Foundation (NSF) for US R&E and government international connectivity, several commercial US Internet service providers and likewise for several foreign national networks. The combination of these four networks yields an infrastrcuture that has become the routing "core" of the global Internet. The following describes each Sprint network.

ICMnet-Atlantic

ICMnet-Atlantic, Internet Autonomous System Number (ASN) 1800, currently provides routing service between the US Internet and the European Backbone (EBONE). There are four interconnection points in the UK, France, Germany and Sweden. ICMnet-Atlanic also internconnects with national networks in South Africa, Kuwait, Turkey, India and Costa Rica and Ecuador. It also interconnects with ICMnet-Moscow which in turn connects to the embryonic Russian Internet. Peru, United Arab Emirates and several national networks in Latin America will be connected in 3Q93.

ICMnet-Atlantic connects to NSFnet and to other Federal Networks, e.g., NASA Science Internet, Energy Sciences Network, MILnet, etc. at the Federal Internet Exchange in College Park, Maryland. ICMnet-Atlantic is also connected to the Washington DC Metropolitan Area Ethernet (MAE-East) where it connects with Alternet, PSInet and SURAnet over a 10 mbps ethernet provided by metrpolitan Fiber Systesm (MFS). ICMnet-Atlantic routing to Europe is coordinated with the European

Backbone (EBONE) which is a cooperative effort among several European national networks. ICMnet-Atlantic obtains trans Atlantic back-up from Alternet/EUnet and ANS/EASInet.

ICMnet-Atlantic interconnects with the SprintLink Public Data Internet in Washington, DC

ICMnet-Pacific

ICMnet-Pacific, Internet ASN 1240, currently provides routing service between the US Internet and Natonal Center for Science Information Systems (NACSIS) in Japan. We paln to establish connections to China, Indonesia, Philiipines and other Japanese networks in1994. ICMnet-Pacific connects to NSFNet and to other Federal Networks at the FIX-West at NASA Ames in California. Most nations in Pacific Rim are available via this path into PACCOM (Korea, Hong Kong, Japan, Australia and New Zealand). ICMnet-Pacific also interconnects with SprintLink.

ICMnet-Moscow

ICMnet Moscow, Internet ASN1803, provides direct access to the US internet. It was established in June of 1993.

SprintLink

SprintLink, Internet (ASN 1239), is Sprint's commercial Public Data Internet. SprintLink connects to both ICM-Atlantic and ICM-Pacific, the Commercial Internet exchange (CIX) and the Metropli-tan Area Ethernet East (MAE-East) in Washington, DC. At the CIX routes are exchanged with Alternet, PSInet, CERFnet, ANSnet (MCI/IBM), BARRnet, NEARnet, JVCnet, WESTnet, Nordframe (Finland), EUnet (Eruope) and UK PIPEX. at MAE-East SprintLink interconnects with Alternet, PSInet, SURAnet and ANSnet. SprintLink also interconnects with several Regional and State peer networks.

SprintLink is a fully meshed network of T1s connecting the backbone's four node sites. Some links have multiple T1s and there is one DS3 (45 mbps) link. Backbone capacity (link and router) is-continuously monitored and capacity is added when necessary

SprintLink provides Network News and Network Information Service Center (NISC) facilities which are described in Appendix C. SprintLink provides primary Domain Name Service (DNS) for customers purchasing this service. SprintLink provides secondary DNS for all SprintLink customers.

Nationwide dial-up service deployment is underway for specific customers. Full scale dial-up product availability is planned for 1Q94.

SprintLink is directly connected to national networks in Malaysia, Japan, India, and the UK (bypassing the ICMnets) and provides them international routing services. Foreign networks connect to SprintLink if they do not wish their USA transit to be provided by the NSFnet.

SprintLink and ICMnet routers are colocated at Sprint Technical Office Centers (TOCs) where they receive local support from Sprint Technicians as well as power and access to Sprint transport facilities, i.e., private line, frame relay and X.25 The TOCs housing SprintLink /ICMnet routers are Washington, D.C., Stockton, California, Chicago, Illinois and Fort Worth, Texas. ICMnet routers are also located at the FIXes and several overseas sites (but they are not SprintLink points of Presence).

The routers in the TOCs are interconnected by FDDI concentrators thus providng 10 mbps intra TOC connectivity.

Below are notable SprintLink Facts:

Netname:SPRINTLINK
Netnumber: 144.228.0.0

Coordinator: Ken Albanese
albanese@icm1.icp.net
(703) 904-2000

Domain System Inverse Mapping Provided by:

OPS.SprintLink.net 192.94.207.70
ICM2.icp.net 192.80.214.224
SprintNet (SprintLink-Dom)
13221 Woodland Park Road
Herndon, Virginia 22071

Domain Name: SprintLink.Net

Administrative Contact:
Steve Burkes
sburke@icm1.icp.net

Technical Contact, Zone Contact:

Ken Albanese
albanese@icm1.icp.net

Domain Servers Listed In Order:
Ops.SprintLink.net 192.94.207.70
icm1.icp.net 192.94.207.66
icm2.icp.net 192.80.214.224

Elapsed Time Action

Begin:

Customer calls Sprint's SMC (800-726-0201) and reports a problem related to "Sprintlink Service." The customer will be asked to provide specific information needed to open a trouble ticket, such as an account number or private number for Clearline customers, or network address for Frame Relay and X.25 customers. This information is provided to each customer when the service is first activated. A trouble ticket will be opened by the SMC operator and passed on to the INCM even if the customer is not able to supply all the basic information, but the initial research may slow down the resolution processs.

2 Hours

When necessary, troubles will be escalated to the INMC supervisor level. A customer may call and request this escalation (800-726-0201).

4 Hours:

A 2nd level escalation may be requested by dialing 800-726-0201.

6 Hours

The INMC Manager is the 3rd level of escalation chain:

Paul Pepe
(703-904-2322)

Pager: 800-859-7242 PIN:18918
e-mail:Pepe@sprint.sprint.com

24 Hours

The Director of Network Services is the 4th level of escalation:

Bob Becker
(703-904-2090
e-mail:Becker@sprint.sprint.com

NOTE: A notification message will be issued upon the opening of a trouble ticket and at each escalation step, addressed to the customer representative(s) on file, to the appropriate Sprint account team, to the SprintLink program manager, Steve Burkes, and to the director of Internet Services and Systems, Bob Collet.

SprintLink Program, Manager:

Steve Burkes
(703)-904-2357
Pager-703-701-4170
email: steve.r.burkes@sprintintl.sprint.com

ISS Program Director:

Robert Collet
(703)904-2230)
Pager: 800-759-7243 Pin 45469
email:robert.d.collet@sprint.sprint.com

INTERNET PROVIDER: UUNET/ALTERNET

Company & Service Overview

- UUNET is an international networking corporation providing domestic and international communications and information services. Its AlertNet® network is a public TCP/IP access network to the Internet .

- UUNET provides both dial-up and dedicated access services which include:

  - no traffic type restrictions
  - UUCP mail gateway to Internet sites and other UUCP hosts
  - Domain registrations at no charge to subscribers and a nominal charge to non-subscribers
  - 8 AM to 8 PM customer support
  - 24 hour, 7 day/week operator support
  - NSFnet access, for AlterNet customers
  - Provides for monthly fee credit if there is a problem with the service. UUNET will act as liaison if problem is with local phone company.

Summary of AlertNet® Dial-up Access Service Offerings-

Service	*Description*	*Subscription Fee*	*Usage*
PHONE$HOME	Provides access to customer's own Internet-connected host system via local UUNET POPS using *telnet* access.	None	$2 - $12/hour
UUCP	• Internet mail • USENET news • UUCP file transfer	$36/month	$2.6 - $16/hour

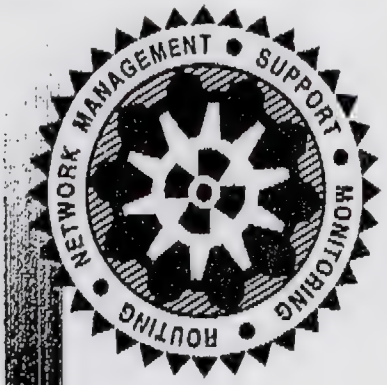
AlterDial℠ • Dial-up SLIP/PPP Access • Requires Modem compatible with V.32, V.42, V.42bis; also supports 9.6 kpbs • Full NSFnet access allowing global-wide Internet reach. • Gain access to any service that runs over TCP/IP, including e-mail, USENET news, Gopher, and WAIS.	**Start-Up Fee**	**Monthly Service Fee**	**Usage Fee**	**Internet Mail & USENET News**	**POP Account or Concurrent NNTP Session**
Client (Individual access)	$99	$20/mo.	$3-$9/hr	$10/month	$10/month
LAN	$499	$49/mo.	$3-$9/hr	$10/month	$10/mo POP $20/mo NNTP
Dedicated	$1,500	$250/mo	Unlimited usage	Included	NA

AlertNet® Dedicated Access Service Offerings

Access Service (TCP/IP)	Startup Fee	Monthly Fee
56Pak™ (56Kpbs access) • Local with Equipment • Local without Equipment • 56K to *Anywhere* with Equipment • 56K to *Anywhere* without Equipment	 • $4,779 • $5,995 • $5,970 • $6,995	 • $795 • $795 • $995 • $995
Normal Volume T1℠ • Full 1.544Mpbs bandwidth availability, but less than 128 Kpbs average usage	$5,000	$1,250
Full Volume T1 • 1.544 Mpbs access	$5,000	$2,000
10Plus℠ • up to 128 Kpbs average usage • 128 - 256 Kpbs average usage • 256 - 512 Kpbs average usage • 512Kpbs - 1 Mpbs average usage	 • $1,500 • $1,500 • $1,500 • $1,500	 • $1,500 • $2,000 • $2,500 • $3,000

Notes:

- Equipment includes router and DSU/CSU located on customer site and is preconfigured by AlertNet.
- Installation is responsibility of customer but can will be coordinated via phone by AlertNet's engineering staff.
- *Anywhere* service provides AlertNet access from a Sprint or Wiltel POP anywhere nationwide.



Please mail this completed
ORIGINAL form to:

UUNET Technologies, Inc.
3110 Fairview Park Drive, Suite 570
Falls Church, VA 22042 USA

Questions? +1 800 4UUNET3 (voice)
+1 703 204 8000 (voice)
alternet-info@uunet.uu.net

AlterNet

Service Agreement
Domestic Services

(Please check your desired connection type)

	Service Type	Monthly Rate	Start-up Charge
☐	AlterDial℠ Dedicated	$250	$750
☐	56K Local	$795	$2,000
☐	*56K to Anywhere℠*	$995	$2,000
☐	AlterFrame℠ 56K Service	$695	$0
☐	T1-Normal Volume℠	$1,250	$5,000
☐	Full T1 (1.5 Mbps)	$2,000	$5,000
☐	*10Plus℠*	Please call for availability and pricing.	$1,500

56K connection options:		Package Price
☐	56Pak™-Local without equipment	$4,770
☐	56Pak-Local with standard equipment	$5,995
☐	56Pak-Local with Cisco 2501 router	$6,995
☐	56Pak-Long Distance without equipment	$5,970
☐	56Pak-Long Distance with standard equipment	$6,995
☐	56Pak-Long Distance with Cisco 2501 router	$7,995

56Paks include all startup costs and service charges for the first six months. After six months, you will be billed $795/month for 56K-Local service, or $995/month for 56K-Long Distance service.

AlterNet Services Provided

- Full, unrestricted access to AlterNet.
- Full access to NSFNET and the associated regional networks subject to NSF approval and compliance with the NSF appropriate use policy, a copy of which is included.
- A UUCP/TCP connection to UUNET if desired.
- Full maintenance of all AlterNet-owned equipment.
- Routing and other network management, support, and monitoring as necessary to provide the IP access.

Speeds listed represent the speed of a connection to an AlterNet hub and do not represent guarantees of available end-to-end bandwidth.

Company Name _____

Address _____

_____

Contact Name _____

Phone Number _____ Fax Number _____

Please read the Terms and Conditions on the back of this page and initial here to indicate your acceptance._____

AlterNet Terms and Conditions

(1) UUNET exercises no control whatsoever over the content of the information passing through AlterNet. **UUNET makes no warranties of any kind, whether expressed or implied, for the service it is providing.** UUNET also disclaims any warranty of merchantability or fitness for a particular purpose. UUNET will not be responsible for any damage you suffer. This includes loss of data resulting from delays, nondeliveries, misdeliveries, or service interruptions caused by its own negligence or your errors or omissions. Use of any information obtained via AlterNet is at your own risk. UUNET specifically denies any responsibility for the accuracy or quality of information obtained through its services.

(2) AlterNet may only be used for lawful purposes. Transmission of any material in violation of any US or state regulation is prohibited. This includes, but is not limited to: copyrighted material, material legally judged to be threatening or obscene, or material protected by trade secret. You agree to indemnify and hold harmless UUNET from any claims resulting from your use of the service which damages you or another party.

(3) Any access to other networks connected to AlterNet must comply with the rules appropriate for that other network. This specifically, but not exclusively, includes NSFNET. Use of AlterNet itself may be for any lawful purpose. Use of AlterNet for lawful commercial purposes is both permitted and encouraged. Connectivity is provided for your organization only. Resale or use of the connection by another organization is prohibited.

(4) Payment is due 30 days after date of invoice. Accounts are in default if payment is not received within 30 days after date of invoice. If your payment is returned to us unpaid you are immediately in default and subject to a returned check charge of $25 from us. Accounts unpaid 60 days after date of invoice may have their service interrupted. Such interruption does not relieve you from the obligation to pay the monthly charge. **Only a written request to terminate your service relieves you of your obligation to pay the monthly account charge.** Accounts in default are subject to an interest charge of 1.5% per month on the outstanding balance. If your state law does not allow an interest rate of 1.5% per month, the maximum allowable rate for your state will be charged. If you default, you agree to pay UUNET its reasonable expenses, including attorney and collection agency fees, incurred in enforcing its rights under these Terms and Conditions.

(5) Billing for AlterNet service will normally commence when the connection from the AlterNet hub is completed to your site and IP packets can be passed. However, in certain circumstances billing may occur when an AlterNet hub and a functioning telephone circuit are prepared to route IP packets to your site. Service is invoiced monthly in advance and may be cancelled in writing with 60 days notice with no penalty. UUNET reserves the right to change the rates by notifying you 60 days in advance of the effective date of the change.

(6) These Terms and Conditions supersede all previous representations, understandings or agreements and shall prevail notwithstanding any variance with terms and conditions of any order submitted. Use of AlterNet constitutes acceptance of these Terms and Conditions.

THE NSFNET BACKBONE SERVICES ACCEPTABLE USE POLICY June 1992

GENERAL PRINCIPLE:

(1) NSFNET Backbone services are provided to support open research and education in and among US research and instructional institutions, plus research arms of for-profit firms when engaged in open scholarly communication and research. Use for other purposes is not acceptable.

SPECIFICALLY ACCEPTABLE USES:

(2) Communication with foreign researchers and educators in connection with research or instruction, as long as any network that the foreign user employs for such communication provides reciprocal access to US researchers and educators.

(3) Communication and exchange for professional development, to maintain currency, or to debate issues in a field or subfield of knowledge.

(4) Use for disciplinary-society, university-association, government-advisory, or standards activities related to the user's research and instructional activities.

(5) Use in applying for or administering grants or contracts for research or instruction, but not for other fundraising or public relations activities.

(6) Any other administrative communications or activities in direct support of research and instruction.

(7) Announcements of new products or services for use in research or instruction, but not advertising of any kind.

(8) Any traffic originating from a network of another member agency of the Federal Networking Council if the traffic meets the acceptable use policy of that agency.

(9) Communication incidental to otherwise acceptable use, except for illegal or specifically unacceptable use.

UNACCEPTABLE USES:

(10) Use for for-profit activities, unless covered by the General Principle or as a specifically acceptable use.

(11) Extensive use for private or personal business.

This statement applies to use of the NSFNET Backbone only. NSF expects that connecting networks will formulate their own use policies. The NSF Division of Networking and Communications Research and Infrastructure will resolve any questions about this Policy or its interpretation.

Please initial on the front of this page to indicate your understanding and acceptance of these Terms and Conditions.

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AlterNet® Product Family Summary

Our AlterNet family of products provides your organization with real-time connectivity to the Internet–the world's largest computer network. Our connectivity offerings range from PHONE$HOME℠ and UUCP services to *10Plus*℠ (our 10-Megabit IP access service), with a wide variety of options in-between. Since our backbone is owned entirely by us, you can use your AlterNet connection for commercial purposes without worrying about policy restrictions. AlterNet can build and support your corporate network for you, with a high level of reliability at a reasonable price. AlterNet is the first Internet service provider to deploy a nationwide 45 Mbps ATM backbone.

PHONE$HOME℠

PHONE$HOME is a cost-effective way to stay in touch while traveling. Our PHONE$HOME service allows you to work on your Internet hosts while you travel. There's no need to call long-distance to reach your computers–you can call our local access numbers across the continental US and gain access quickly and inexpensively.

Cost: $2 - $12/hour

UUCP Services (Internet Mail and USENET News)

UUCP services offer you reliable Internet mail and USENET news across the US and around the world. In addition to our mail and news services, the UUCP service offers proxy Internet file-transfer capabilities and access to our extensive on-line software and documentation archives.

Cost: $36 monthly account charge
$2.60 - $16/hour connection charge
Please call for information on our inexpensive low-volume services.

AlterDial℠

Dial-up SLIP or PPP Internet Access via High-Speed Modems

AlterDial is our least expensive connectivity option, offering connectivity comparable to that enjoyed by our high-speed leased-line customers. You can pay for AlterDial on an hourly basis, or pay one low flat rate for unlimited usage. All AlterDial customers get access to our network and to our extensive set of links to other Internet service providers. In addition, AlterDial customers who qualify get full NSFNET access, allowing them to reach all corners of the Internet. AlterDial customers gain access to any service that runs over TCP/IP, including electronic mail, USENET news, Gopher, and WAIS.

Cost: Metered Client–$20/month basic service fee
$3 - $9/hour connection costs
$10/month optional charge each for Internet mail and USENET News via UUCP/TCP
$10/month optional charge for each POP account or per concurrent NNTP session
$99 one-time start-up fee

Metered LAN–$49/month basic service fee
$3 - $9/hour connection costs
$10/month optional charge each for Internet mail and USENET News via UUCP/TCP
$10/month optional charge for each POP account or $20 per concurrent NNTP session
$499 one-time start-up fee

Dedicated–$250/month for unlimited use, including Internet mail and USENET news
$1,500 one-time start-up fee

56Pak™

56 Kbps Internet Access

The 56Pak bundle of equipment and services gives you a complete turnkey solution to your Internet connectivity needs for one low pre-paid fee. The package includes a Telebit NetBlazer PN2 Router and a 56K CSU/DSU, preconfigured by AlterNet to simplify your installation; WAN installation coordinated via phone by AlterNet's engineering staff; and your first six months of AlterNet's full 56K Internet service.

Cost: 56K Local without equipment–$4,770 (covers first six months)
56K Local with equipment–$5,995 (covers first six months)
Monthly service after first 6 months–$795

56K to Anywhere℠ (access to AlterNet through any Sprint or Wiltel POP anywhere nationwide)
without equipment–$5,970 (covers first six months)
56K to Anywhere℠ with equipment–$6,995 (covers first six months)
Monthly service after first 6 months–$995

Normal Volume T1℠

1.5 Mbps Internet Access (less than 128 Kbps average usage)

Low Volume T1 is targeted towards subscribers with moderate throughput requirements in general, but who periodically require greater bandwidth. The full T1 bandwidth is available for your use; however, your average monthly usage must be under 128 Kbps. This level of service meets the needs of most high-volume users.

Cost: $1,250/month service fee
$5,000 one-time start-up fee
Line costs are not included; please contact AlterNet Marketing for pricing.

Full Volume T1

1.5 Mbps Internet Access

Our full-volume T1 service is targeted towards subscribers who need very high bandwidth on a regular basis.

Cost: $2,000/month service fee
$5,000 one-time start-up fee
Line costs are not included; please contact AlterNet Marketing for pricing.

10Plus℠

10 Mbps Internet Access (up to 1 Mbps average usage)

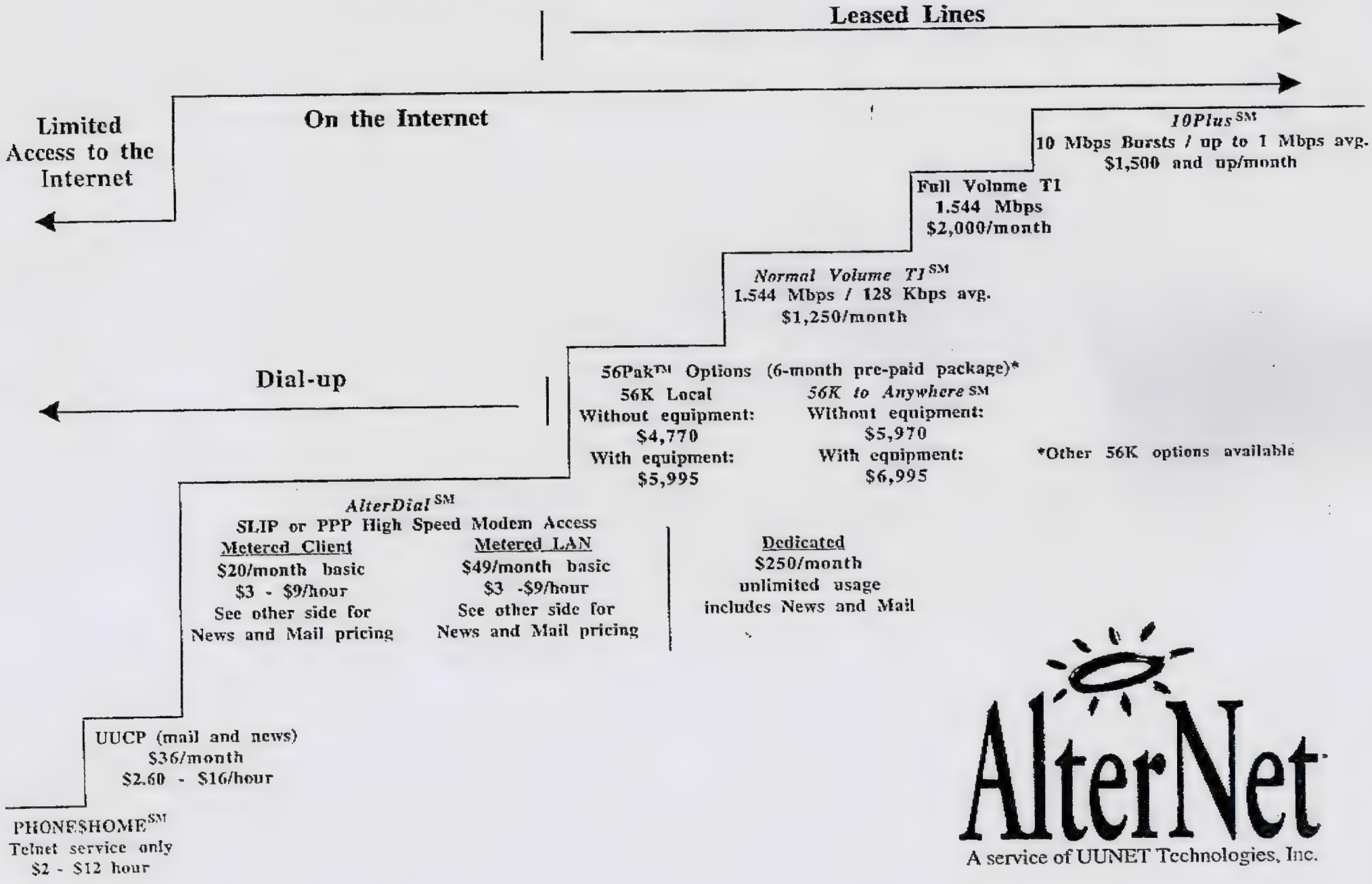
Our 10Plus service offers extremely high throughput Internet access to customers with demanding bandwidth requirements. Our 10 Mbps access offers the simplicity of a physical Ethernet interface, with prices usually associated with traditional T1 access. This revolutionary 10 Mbps service is the new price/performance benchmark in Internet access. Several different service tiers are available.

Cost: $1,500 one-time start-up fee
$1,500/month service fee (up to 128 Kbps average usage)
$2,000/month service fee (128 Kbps-256 Kbps average usage)
$2,500/month service fee (256 Kbps-512 Kbps average usage)
$3,000/month service fee (512 Kbps-1 Mbps average usage)
Please call for availability and detailed pricing.

UUNET Technologies, Inc. 3110 Fairview Park Drive, Suite 570 Falls Church, Virginia 22042 USA
For more information: 1-800-4-UUNET-3 (voice) 1-703-204-8000 (voice) 1-703-204-8001 (fax) alternet-info@uunet.uu.net
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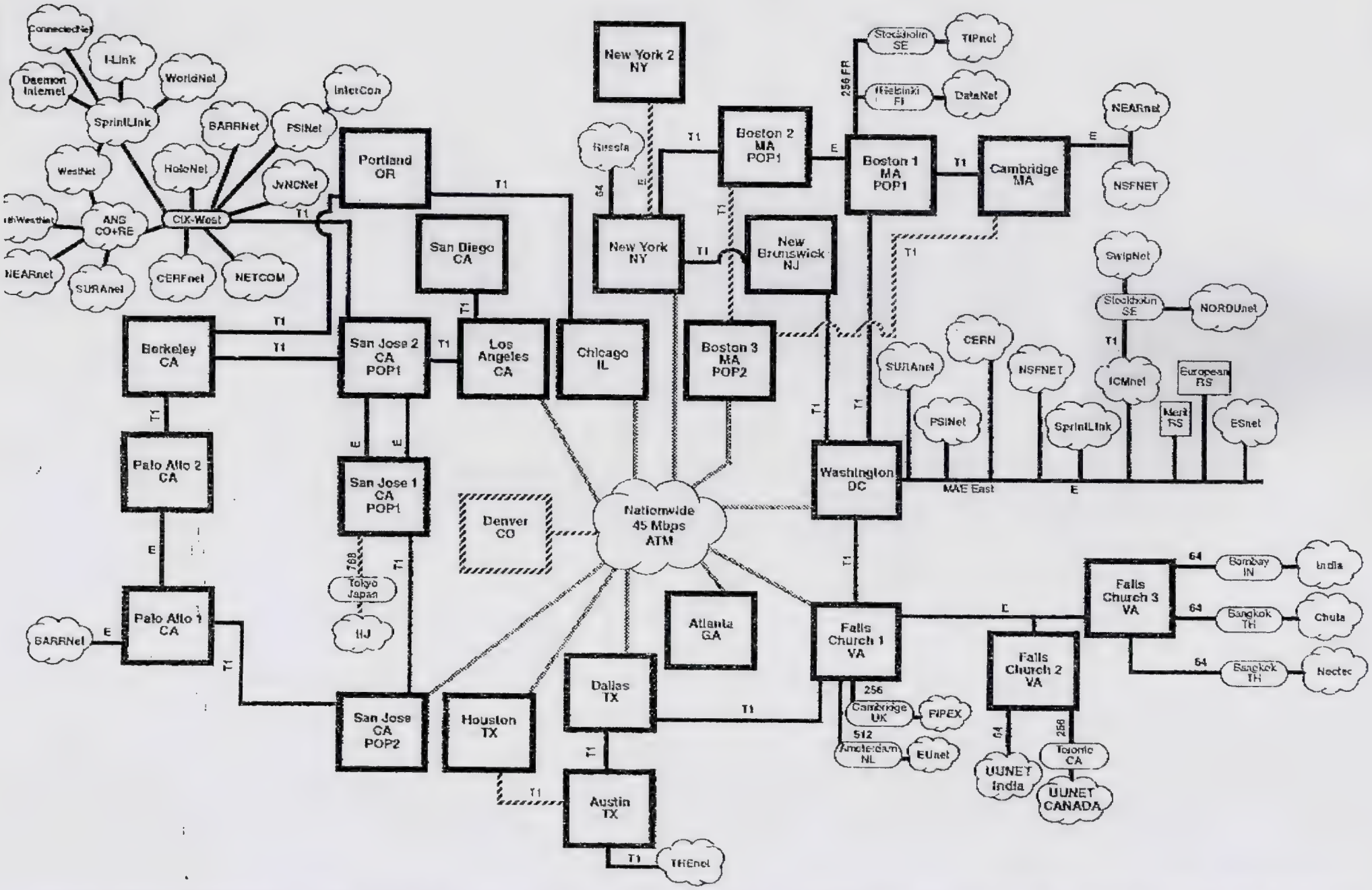
AlterNet® Product Family



AlterNet

A service of UUNET Technologies, Inc.

AlterNet™ Backbone Configuration 2/18/94



For more information contact: UUNET Technologies 3110 Fairview Park Drive, Suite 570 Falls Church, Virginia 22042 USA +1 800 4UUNET3(voice) +1 703 204 8000 (voice) +1 703 204 8001 (fax) alternet-info@uunet.uu.net

we do offer other services if you need additional information.

UUNET General Information

UUNET Technologies, Inc. is an international networking corporation providing domestic and international communications and information services to its customers worldwide.

WHAT DOES UUNET DO?

UUNET's electronic mail and news services provide a dedicated, accessible, and reliable facility for international electronic mail and electronic news, including mail access to the Internet.

UUNET offers access to:

* UUCP mail
    - Over 2,500 direct mail connections
    - UUNET is an authorized Internet mail gateway, and can act as your Internet mail forwarder.
    - UUNET serves as the principal gateway to European, Australian Asian, and South American UUCP sites.
* USENET news
    - UUNET offers a full or partial news feed; all news groups are offered.
    - Over 1,000 news feeds
* Publicly available UNIX software and information
    - Available via UUCP, magnetic tape, or 900 number
    - GNU, MIT X Window System, Kermit
    - Berkeley 4BSD (not requiring AT&T license)
    - Bug fixes and files from Sun, Pyramid, SCO, and Microsoft
* NSFnet access, for AlterNet customers with appropriate authorizations

UUNET offers the following services:

* AlterNet, a public TCP/IP Internet without traffic type restrictions
* UUCP mail gateway to Internet sites and other UUCP hosts
* Domain registrations at no charge to subscribers, and a nominal charge to non-subscribers

* Customer support 8 a.m. to 8 p.m. (Eastern Time) Monday through Friday

* Operator support 24 hours a day, 7 days a week

UUNET also offers the following at a substantial discount:

* Telebit modems

* Uninterruptible Power Supplies

* Nutshell Handbooks

* Other books of interest

WHEN IS SERVICE AVAILABLE?

UUNET's facility is staffed and operational 24 hours a day, seven days a week.

WHICH ACCESS METHODS ARE AVAILABLE?

* From within the United States:

    - Dial your closest CompuServe network access number (local from thousands of US cities). You are then connected to UUNET via the X.25 public data network. No registration with CompuServe is necessary.

    - Direct dial modem at our San Jose, CA; Palo Alto, CA; Berkeley, CA; Boston, MA; Austin, TX; New York City, NY; Portland, OR; and Falls Church, VA hubs

    - 800 number

    - 900 number for anonymous access to our archive

* Connection Methods

    - UUNET supports all standard modems (V.32 / V.32bis / V.22bis / Bell 212A / Bell 103)

    - For those of you with UNIX platforms, you only need the standard UNIX UUCP programs. For those with non-UNIX platforms, software is available through commercial vendors.

* Modem Types

    - UUNET uses Telebit T2500 and WorldBlazer modems

    - We support Telebit PEP / 9600 V.32 / V.32bis / 2400 / 1200 / 300 bps

WHY SHOULD I SUBSCRIBE TO UUNET?

UUNET provides the largest and best connected UUCP mail service in the

world. AlterNet provides an inexpensive, high quality public TCP/IP network service for commercial or private use, or for an Internet connection.

If your organization has come to depend on electronic mail and news as part of its daily business, you need a professional communications service you can depend on.

UUNET offers you:

SAVINGS	UUNET can reduce your communication costs, especially if you are presently paying for long distance calls to send or receive UUCP mail or news. UUNET offers discounts on modems and other computer equipment, and books.
RELIABILITY	UUNET exists as a communications relay. It will never be unavailable due to other work. Our facility is operational 24 hours a day, 7 days a week and uses an uninterruptible power system.
AVAILABILITY	UUNET is the best connected news machine in the country. All news groups are offered.
ACCESSIBILITY	UUNET is an authorized Internet mail gateway as well as serving as the principal gateway to European, Australian, Asian, and South American UUCP sites.
ARCHIVES	UUNET has an extensive archive of publicly available UNIX software.

HOW DO I SUBSCRIBE TO UUNET?

We have several subscription options for users with different needs. The options and pricing are described below. Call us and ask for the General Information Packet on UUNET and AlterNet. Fill out the UUNET Subscription Form and send the original in to us.

Subscription options are:

* Regular uucp
  Our basic service provides electronic mail and news connectivity for $36 per month plus your connect hours. Charges for connect hours are listed below.

TYPE	RATE	MINIMUM
REGULAR UUCP		
Account Charge	$36.00 monthly	1 month
Local Inbound (a)	$2.60 hourly	1 min.
Local Outbound (b)	$2.60 hourly	3.6 min.
Remote Inbound (c)	$5.60 hourly	1 min.
Compuserve Modem (d)	$5.60 hourly	1 min.
Inbound (800) and		

Remote Outbound Daytime	$16.00 hourly	1 min.
Inbound (800) and Remote Outbound Evening	$13.00 hourly	1 min.
Inbound (800) and Remote Outbound Night	$10.00 hourly	1 min.

(a) All calls to our Falls Church, Virginia headquarters

(b) Local calls placed from our Falls Church, Virginia headquarters

(c) Calls placed to any of our hubs other than Falls Church, Virginia

(d) A CompuServe surcharge also applies to all geographic areas outside the continental United States. Call UUNET for the rate.

* Low Volume Users
  All sites are entitled to three connect hours per month for an annual fee of $300, paid in advance. Customers may connect via local dialup, remote dialup, or the CompuServe remote network (CompuServe charges are included in the fee). Discounts do not apply.

  In addition, customers may use UUNET's 800 number for an additional $180 per year (total $480, paid in advance). Discounts do not apply.

  Restrictions
  - Sites exceeding three connect hours will be charged at regular UUNET rates for the entire monthly usage, not just the excess. This includes the $36 administrative fee.
  - The yearly fee is non-refundable and will not be prorated for partial months.
  - This offer is only available in the continental USA and may be withdrawn at any time.

* TCP/IP
  A TCP/IP account is available only if you are an Internet site. Total cost per month is $98, which includes the $36 account fee.

* Foreign
  Sites not in the USA, Puerto Rico, Guam, and the US Virgin Islands must apply for a foreign account. The cost for a foreign site is US $432 per year, prepaid to UUNET Technologies. Foreign sites are responsible for their own communication connection to UUNET. Discounts do not apply. Sites in Canada and India should contact UUNET in those countries.

WHO DO I CONTACT WITH QUESTIONS?

Please contact us and ask for Customer Support.

WHERE IS UUNET?

The address is:

UUNET Technologies, Inc.
3110 Fairview Park Drive, Suite 570
Falls Church, Virginia 22042 USA
+1 800 4UUNET4 (voice)
+1 703 204 8000 (voice)
+1 703 204 8001 (fax)
info@uunet.uu.net

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AlterDial

Internet Access

AlterDial, the newest member of the AlterNet Internet Services family, provides inexpensive IP connectivity with the same access capabilities leased line customers receive. AlterDial is billed by connect time or at a fixed monthly fee.

AlterDial gives you access to the Internet and AlterNet's network. AlterNet gives you commercial access to Internet services such as Mail, News, UUCP, TCP/IP, source archives, Domain Name Service, Gopher, WAIS, XMosaic, WWW, and all of AlterNet's nationwide ATM network backbone.

What are my Connection Options?

AlterDial offers two connection options: metered and dedicated service.

* Metered Service

  AlterDial metered service gives you Metered Client Internet access for a $20 per month fee, or Metered LAN access for a $49 per month fee, plus an hourly rate. You pay only for what you use.

  The hourly rates are $3 per hour for direct dial-in at AlterNet's U.S. POPs or $9 per hour for 800 number service.

  Mail and News delivered over UUCP/TCP are each an additional $10 per month. Mail delivered via POP is an additional $10 per POP account, while News reading via NNTP is $10 per concurrent session for Metered Clients and $20 per concurrent session for Metered LANs.

  o Metered Start-Up Fee

AlterDial Metered Client service has a one time start-up fee of $99. Metered LAN service has a one time start-up fee of $499. The start-up fee includes one hour of technical support. One hour is sufficient to configure AlterDial's authorized configurations with approved packages.

* Dedicated Service

AlterDial dedicated service gives you Internet access for a flat monthly rate and all the service you need. The monthly rate is $250 per month for unlimited usage. Dedicated service includes unlimited Mail and News.

  o Dedicated Service Start-Up Fee

AlterDial dedicated service has a one time start-up fee of $1,500. This includes a dedicated modem at AlterNet's facilities.

What are my Hardware and Software Options?

AlterNet is constantly evaluating new software and hardware solutions for use with its AlterDial service. PCs, Macs, most UNIX systems, Novell Netware, and complete IP networks can be attached to AlterDial service. See the other side of this sheet for the list of software packages currently under evaluation. Call for the latest list.

How Do I Subscribe?

Call AlterNet Sales and ask for an information packet on AlterDial. Fill out the subscription form and mail it back. For questions, call the number below.

AlterDial Pricing 10/28/93

	Metered Client	Metered LAN	Dedicated
Installation	$99	$499	$1,500
Hourly - AlterNet POPs	$3	$3	N/A
Hourly - 800 Number	$9	$9	N/A
Monthly Rate	$20	$49	$250
News / UUCP	$10	$10	N/A
Mail / UUCP	$10	$10	N/A
News NNTP (1)	$10	$20	N/A
Mail / POP (2)	$10	$10	N/A

Notes:

(1) per concurrent feed (2) per user mailbox

Third Party AlterDial Access Methods

UNIX

- Morningstar PPP
- BSDI BSD/386 1.0 with approved patches

PC

- FTP Software
- NetManage Chameleon

Macintosh

- Intercon TCP_Connect II

Dial-up Routers

- Telebit NetBlazer & NetBlazer-PN
- Morningstar PPP
- BSDI BSD/386 1.0 with approved patches

* Call for updates. New products are always being evaluated.

UUNET Technologies, Inc.
3110 Fairview Park Drive, Suite 570
Falls Church, Virginia 22042 USA
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+1 703 204 8000 (voice)
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alternet-info@uunet.uu.net

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Evie Allen
evie@uunet.uu.net or uunet!evie
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3110 Fairview Park Drive, Suite 570
Falls Church Va 22042
(703) 204-8000

How To Select an Internet Service Provider

Rick Adams
President & CEO
UUNET Technologies, Inc.
Providers of *AlterNet* Internet Services
3110 Fairview Park Drive, Suite 570
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Buying an Internet Connection is a lot like buying a computer. As with buying a computer, your choice of Internet providers should be driven by your intended use. If you are looking for a minimum cost, bare bones computer for your kids, you might seek out the lowest priced system in the back of a magazine or even assemble something yourself from parts bought at a flea market. However, if you are buying something for your company that your business will depend on, you would probably choose differently.

For your business, you might consider buying the most expensive solution exercising the theory that you get what you pay for. However, once you've really studied the question, the right choice might well turn out to be a mid-range system from a stable, nationally recognized provider.

There are some low cost IP service suppliers who claim to be *just as good as the others*, but may not be in business next year to prove it. Conversely, there are other suppliers who will attempt to justify providing the same level of services as their competitors, at many times the price.

This guide suggests a set of questions to pose and evaluation criteria against which you can compare and contrast the different Internet service companies you have to choose from. In this exciting but still maturing market the lure of Internet connectivity and Enterprise Wide Area Network outsourcing will require many companies to evaluate service providers within the next couple of years. The intent of this guide is to stimulate your thinking on the subject while challenging you to challenge your provider!

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• Network Topology

Network topology is one of the most important criteria to consider when choosing a provider. Looking at the network topology can help you understand how vulnerable the network is to outages, how much capacity is available when the network is loaded more heavily than usual and most importantly, how well the provider understands network engineering.

Any competent provider should be happy to show you their network topology. It's a good way for them to demonstrate how well they understand their business.

Look closely at what they show you. Some providers will give you a *virtual* backbone map. Virtual networks are meaningless. Your data does not travel on a virtual network -- it travels on a physical network. A virtual network map is merely a representation of all the theoretical paths that could be implemented by the supplier's virtual circuit switching equipment and an is attempt to side step the issue of physical capability. Your supplier needs to understand the physical network to understand what is important for serving their customers. If they tell you that the physical topology is unimportant, they either don't understand how to engineer a network or they are trying to disguise something. Remember, there is nothing inherently wrong with using frame relay, ATM or other technologies that use virtual circuits as part of the backbone. However, your provider must understand the physical topology on top of which his virtual (logical) network is running.

• Network Link Speeds

Now that we're evaluating the physical topology, let's look closely at the speeds of the backbone links. If they won't show you the speeds, then they're really hiding something. The first thing to understand is that your network connection can only be as fast as the slowest link in the path.
It doesn't matter if you are connected to a T-3 node if there is a 56 Kbps link between you and your destination. This is like hooking a half-inch garden hose to a fire hydrant. The limit is the garden hose, not how much water the hydrant can put out!

Next ask if the topology you are being shown is operational now. Some providers like to show links that are **not** operational as part of their backbone infrastructure. Some even go as far as to label the planned links with solid lines and the operational links with dashed lines! You're in for a big surprise if you don't notice this switch! Similarly, don't confuse the press release about a new high speed network link with that link actually being operational.

• External Network Links

Now look at the external links of your candidate's backbone. Do they have a single connection to the rest of the world, *e.g.*, via NSFNET? This is a potential single point of failure. Look for multiple, direct connections to other network providers. The more of these connections the better. This shows that the provider is concerned about external connectivity and does not want to be dependent on some third party for interconnection. If they have a single connection to the outside world, ask them how often it fails and how long they usually are isolated. If they can't give you these statistics, are they managing their network well enough to manage yours?

Check to see if they have their own national backbone or if they rely on NSFNET for national connectivity. If they rely on NSFNET for connectivity, ask them what their plans are for national connectivity when the free NSFNET backbone goes away in April 1994. Now ask yourself if you have enough confidence in their plan to risk your connectivity to the rest of the world.

• High Speed Backbone

If they claim to have a high speed backbone, check to see if it is that speed **now** or is just "planned." Some providers claim to have a T-3 (45 Mbps) backbone, but if pushed will admit that what they really mean is "T-3 capable." A 2400 bps dial-up modem is also T-3 *capable* because tomorrow it is capable of being replaced with T-3. If they are misleading you about something as fundamental as their network capacity, what else are they trying to sneak past you?

The next thing to ask yourself about high speed backbones is if you can actually connect to it for a reasonable cost? All service providers require you to buy the local loop segment from your facility to their closest Point Of (service) Presence or POP. You will have to buy this directly or indirectly from one of the telephone companies serving your local area. Some providers offer their service in such a way that the local loop cost is greater than their fee to provide you with the service in the first place. Think of the hose analogy again. If you're limited by the local loop speed because the price of a high speed loop is not cost effective, then how useful is a high speed backbone?

Many providers will claim some impressive number of POPs. Find out what constitutes a POP by their definition. Some providers claim a POP anywhere they deliver service. Find out if many of their "POPs" are single customers at the tail end of low speed lines or if those POPs house high end routers linked by physically redundant high speed connections. Network POPs should be designed to scale with additional customers who, themselves, have growing requirements.

• Technology

The technology being used to operate the network is also critically important. Today, there is plenty of commercial quality router, switch and modem technology available from companies whose business is to make that equipment. Any provider still relying on their own internally developed equipment is doing you a disservice. You deserve the benefits of leading edge, production technology, not aging hardware that has been contorted into a use never intended by its designers.

Sometimes a provider can have a bad case of "Not Invented Here" syndrome. This is a sure sign of long term problems. Remember, you are buying a *service*. The provider of this service should be using the best available technology to deliver this service. They should not use the service as an excuse to use surplus equipment and technology. The recent popularity of Internet connectivity has some strange bedfellows offering connectivity services. Again, ask yourself who you think has the better incentive to make network connection work and keep working: the researcher who gets paid if it works or not *or* the commercial supplier who only gets paid if it's working?

• Build or Buy?

Another worrisome syndrome to watch out for is the "Control Freak." Some providers claim that they need to run even the lowest layers of their network to deliver quality service. This is simply not true. The truth of the matter is all Internet service providers rely on one or more telephone companies to assemble "their" network. The only way for any company to build "their own network" is to physically dig their own trenches and lay their own fiber into the ground.

The only real question is at which physical link or transport level your potential service provider is going to buy from the much larger phone companies. If the lower level infrastructure and service (such as T-1, T-3, Frame Relay or ATM) needed to support an Internet service provider's value added service is offered by a phone company, it's not cost effective or in the best interest of the provider's customers for the provider to even *think* about building and operating it. The provider simply can not match the economy of scale that comes with being a phone company. If your provider has chosen to build something that they could have bought much cheaper and more reliably, why should you have to pay for their misplaced priorities? (If they can do it better and cheaper than the phone companies, why aren't the phone companies buying it from them?) The job of an Internet service provider is to manage and maintain your IP/OSI level connectivity. Look for strong relationships and partnerships between your Internet service provider and the nation's host of Alternative (Bypass), Local (RBOC) and Long Distance (IXC) carriers.

• Technical Staff

Probably the most important aspect to consider when choosing a provider is the quality of their technical staff. The technical staff are the ones who will get your connection running to begin with and then keep it and the network running in the future.

Check the experience of their staff in TCP/IP data networking. They should have several people who have been running TCP/IP data networks for close to 10 years. The average experience is also relevant, as it's likely that you won't usually deal with their most senior people. However, it's reassuring to know that the very senior people are available if you need them. Make sure that their "technical" staff consists of people who are experienced with TCP/IP and not of people whose previous assignment was "networking related" and have now been assigned to this new project.

Make sure the provider has adequate staffing to cover the usual situations. If they send people to Interop for a week, how many people are back at the office running things and how skilled are they? If they only have a few technical people and they all go to shows, then what happens if your network connection breaks while they are gone for a week. (Be suspicious if they say they can handle it by dialing back in...)

Find out what their technical staff turnover is. If people are leaving find out why and who is left to keep your connection operational. Many suppliers of service have single points of failure in their staff capacity as well.

• Network Operations Center

Check out their network operations center ("NOC"). It should be staffed by at least one person always. This includes nights, weekends, holidays and during important sporting events. If they are quick to claim "7x24" operations, you might ask them what they provide the other 358 days of the year. An amazing number of providers claiming 7x24 operations really mean that someone will answer the phone all the time, not that they will have someone capable of dealing with your problem. An answering service or beeper number is no substitute for a trained network engineer. Insist on one being always available and not just on call, as you can never tell when your connection will fail and what critical project it will have an impact on.

Ask how the NOC is staffed. While it is normal to have only junior people on duty at odd hours of the night, it is critical that senior personnel be on site at least 8 AM-8 PM Eastern time, Monday through Friday. If your connection fails during normal business hours, you deserve to have very senior people immediately available to work on it.

- Organization

Find out how long the company has been in the IP business. Determine if they are going to be in business for the long run. Maybe that deal is a bit too good to be true for a good reason. Quality networks are not built on a shoestring budget. The pricing may look attractive now, but the passage of time often reveals hidden costs and price increases, the greatest of which can be having to switch providers.

Ask about their financial stability. While you don't need to see copies of their audited financial statements, you should at least be comfortable that they have a positive cash flow and are going to be in business next month to provide your connectivity. Determine if they have one or two major accounts that provide a disproportionate amount of revenue and what impact losing those accounts would have on their ability to maintain your quality of service.

Are they an independent operating unit with its own staff and facilities or are they run out of the back door of a larger organization that doesn't know they exist? How critical do you think having the support of the parent organization is to their long term viability?

- "Non-Profit"

At this stage of the market's development, some providers are operating from behind questionable non-profit cloaks. Some may be subjecting their sponsoring organizations to questionable legal and/or tax risks by selling commercial services in competition with for profit corporations. The IRS requires that non-profits keep track of all revenue that is unrelated to their non-profit charter and the pay tax on it just like a for profit corporation. Why should you care about your provider's tax troubles? It's all about selecting a provider that can supply you with the highest quality, best price performing, reliable Internet and Enterprise WAN network services. Legal or tax problems can provide a major "distraction" to the provider. As these services become more and more an integral component of your successful business, your choice is more critical and all dimensions of your supplier are integral to your decision. There will be a shake out in the Internet service business and only the strong will survive.

Is the company rapidly growing and expanding or is it a stagnant anachronism and merely resting on its laurels and remembering the good old days when they were the only provider in the area. How long do you think they will survive in competition with healthy, growing companies?

Is the group you're dealing with actually providing the network service or are they fronting, merely acting as a local aggregator, for some larger entity. If so, what is the health of the larger provider and why should the larger provider give your

connection the same attention that they are giving their directly connected customers.

Does the provider have a straightforward internal business model or do they have a series of sub-contracts of sub-contracts and shell games with wholly owned subsidiaries. Why are they adding unnecessary levels of complication and expense and why should you pay for it?

• Commercial Activity

Is the provider a member of the Commercial Internet Exchange Association ("CIX")? This is a necessity if you are considering making commercial use of the Internet. If they are a member, see if they are really connected to the other members or just joined the association without interconnecting. Some groups advertise membership in the Association but have never interconnected. Some go as far as implying that they are connected to CIX members when they merely serve as a transit network for providers who are really members and really interconnected. Don't let them confuse you. Insist on a straight answer.

Does the provider require you to abide by an *Appropriate Use Policy*? Do you understand it? Is it ever enforced? Do you need to worry about it suddenly being enforced capriciously?

• Full Range of Services

Does your provider have a full range of services from low end to high end or is it just filling a niche? If you need to increase or decrease your service level, will you need to switch providers?

Does your provider offer true one stop shopping? Can they supply equipment, manuals, training, consulting, etc., as well as basic service? Can they provide connectivity throughout the country (and the rest of the world) or do they just serve a small region? Can they provide service in other countries through established partnerships with international suppliers and bill you on the same invoice as your domestic service?

• Customer Base

Find out how many customers the provider has. Don't be mislead by the total number of customers the provider may brag about having. Some like to claim all of the *individuals* they have connected, while most others only count the *organizations* they have connected. The number of organizations willing to pay $1,000 per month for connectivity is a lot better indicator of the service quality than the number of individuals willing to pay $10.

• Comparison Shopping

Do a price/benefit analysis. Some providers may appear to be priced less than others. Make sure you do an "apples to apples" comparison. Don't compare one provider's *no frills* service with another's full service offering. Don't be confused by the names of the product. What one provider thinks is *Basic* may be minimal or useless to you.

Don't be afraid to ask for customer references and talk to them. See what issues current customers have. They will likely be similar to yours. If you get a reference, make sure there is no insider relationship with the provider such as an investment or a member of the board of directors.

Find out where their new customers come from. The most interesting statistic is how many of their customers have switched from other providers!

• Conclusion

The astonishing, worldwide growth of the Internet as a public access computer network has all kinds of new users, large and small, investigating the virtues of "getting on the Internet." Today, more and more companies are using the Internet to conduct their business, communicate with and support their customers, exchange electronic mail with hundreds of thousands of users, and seek and find valuable information leading to competitive advantage. This resource is indispensable once turned on. The choice of service provider to be responsible for ensuring this vital business tool is the most important decision you will make when embarking on the Internet.

Hopefully this white paper has provided assistance examining some of the issues and raising some of the questions that will lead to a long and trusted relationship with your full service, professional Internet service provider.

EDI PROVIDER: RAILINC.

Company & Service Overview

- RAILINC provides network services - including EDI and industry databases - and software to the transportation industry.

  - Primarily services the rail industry but its clients also include ocean and motor carriers; manufacturers; and distributors.
  - VANs are also customers; they use RAILINC as backbone to their network to supply RAILINC specific services.
  - It is more of a captive processing service for the railroad industry rather than a full service VAN.
  - Services provided over an IBM environment.

- RAILINC EDI Services are used by over 400 clients to allow electronic communications for exchanging purchase orders, invoices, shipment racing messages, bills of lading freight bills, and administrative messages. The following EDI services are available:

  - *Rate EDI Network* - provides automatic tariff information in ANSI X.12 format.
  - *Interline Settlement System (ISS)* - facilitates financial settlements between transaction partner.
  - *Car Hire Data Exchange* - leasing and tracking of train cars, trailer, containers. Recently converted from proprietary to ANSI X.12 format.
  - *Interline Service Management* - freight car database that tracks location and movement of freight cars, trailers, and containers. X.12 and EDIFACT format.
  - In future, more EDIFACT usage will occur.

RAILINC Services Summary

Dialup	Leased-Line
• Async - x modem/y modem protocol - 1200-2400 Baud • Bisync - 2400, 4800, 9600 BAUD	• Customer responsible for provisioning and costs associated with line. • Connectivity: - SNA LU1, LU6.2 - 2780/3780 Sync
Network Access Async Base Charge $100/month Bisync Base Charge $160/month Character Charge Async $0.08/thousand Bisync $0.06/thousand Connect Time Charge Async 1200 BAUD $.62/minute 2400 BAUD $.75/minute Bysnc 2400/4800 BAUD $.50/minute 9600 BAUD $.75/minute	Connect Time Charge 2400 BAUD $ 460/month 4800 BAUD $ 690/month 9600 BAUD $ 920/month 19,200 BAUD $1,400//month Store and Forward Charge First 10 million characters $395 Above 10 million characters $17/million

- Security provided by IBM RACF (Resource Access Control Facility)
- Customer Support Center
  - 8AM to 8PM telephone hotline support, i.e. data tracking
  - Network operations: 24hrs, 7 days/week
  - Compensation limited to service charges only in the event of service problems

Issues

- ❒ Support of remote users with little/no computer/networking knowledge; cannot control selection and compatibility of user hardware and software with RAILINC environment.

- ❒ NAFTA is pushing compatibility issues

- ❒ Customer support and service is complex; IBM environment more difficult to utilize with their growing customer base.

  - Connectivity of PC and LANs into IBM mainframe environment

- ❒ EDI not offered over Internet

  - UNIX oriented; railroad industry is IBM oriented.
  - Security holes and audit trail is lacking
  - RAILINC has yet to officially endorse Internet as a commercial vehicle for their traffic; viewed as a network for educational purposes.
  - RAILINC is hub system (centralized) system; clash with multi-node internetwork architecture
  - Internet is viewed as competitive threat

RAILINC®
CORPORATION

A Subsidiary of the
Association of
American Railroads

CUSTOMER INFORMATION BULLETIN

No. 92-01
November 1, 1992

RAILINC® DEDICATED NETWORK RATES FOR 1993

This bulletin provides prices for RAILINC's dedicated network services effective January 1, 1993.

ENHANCED SERVICE - TO BE ANNOUNCED

STANDARD SERVICE

MONTHLY CHARGES

CONNECT CHARGE	
2400 BAUD	$ 460.00 PER MONTH
4800 BAUD	$ 690.00 PER MONTH
9600 BAUD	$ 920.00 PER MONTH
19200 BAUD	$1,400.00 PER MONTH

STORE AND FORWARD CHARGE

$395.00 BASE CHARGE FOR FIRST 10 MILLION CHARACTERS PLUS
$17.00 PER MILLION CHARACTERS ABOVE 10 MILLION CHARACTERS

RAILINC CORPORATION • 50 F Street, N.W. • Washington, D.C. 20001
Telephone (202) 639-5580 • Facsimile (202) 639-5546 or 2551

RAILINC®
CORPORATION
A Subsidiary of the
Association of
American Railroads

CUSTOMER INFORMATION BULLETIN

No. 92-02
November 1, 1992

RAILINC® DIAL-IN NETWORK RATES FOR 1993

This bulletin provides prices for RAILINC's dial-in network services effective January 1, 1993.

NETWORK ACCESS

ASYNCHRONOUS BASE CHARGE:	$100.00 PER MONTH
BISYNCHRONOUS BASE CHARGE	$160.00 PER MONTH

CHARACTER CHARGES (APPLY TO ALL SWITCH MESSAGE TYPES)

ASYNCHRONOUS	$ 0.08 PER THOUSAND
BISYNCHRONOUS	$ 0.06 PER THOUSAND

CONNECT TIME

ASYNC 1200 BPS	$ .62 PER MINUTE
ASYNC 2400 BPS	$ .75 PER MINUTE
BISYNC 2400 OR 4800 BPS	$ .50 PER MINUTE
BISYNC 9600 BPS	$ .75 PER MINUTE

PHONE CALLS TO DIAL THE NETWORK FROM POINTS IN THE U.S. AND CANADA ARE TOLL FREE.

RAILINC CORPORATION • 50 F Street, N.W. • Washington, D.C. 20001
Telephone (202) 639-5580 • Facsimile (202) 639-5546 or 2551

EDI PROVIDER: TELINK SYSTEMS, INC.

Company Overview

- TELINK Systems, Inc. is a provider of standalone micro-based EDI conversion products.
  - In business since 1982.
  - Serves the following industrial markets
    - banking
    - government
    - grocery
    - manufacturing
    - retail trade
    - transportation
    - and warehousing
- TELINK software enables companies to communicate vis-a-vis EDI. TELINK software features:
  - ANSI X.12 standard EDI formats
  - 130-150 translation sets
  - 50-60 communication interfaces
- Technical Capabilities Required of User
  - 386/486 PC or UNIX-based microcomputer
  - Translation s/w for X.12
  - Security
  - Async, bisync and some SNA communication capabilities

EDI, Inc. TELINK Services Summary

- Product Families include
  - *TELINK/micro* which is table driven microcomputer system featuring stand-alone and front-end functionality.
  - *TELINK/sa* provides translation in stand-alone mode with a streamlined menu structure
  - *TELINK/gw* with mapping capability, is designed for front-end user.
  - *TELINK/osa* is a Unix-based system designed for Unisys U6000-series computer. Provides seamless EDI gateway with Unisys EDI software for host applications.

- Software utilities:
  - *EDI-MAX* is a data mapper which allows TELINK to accommodate variations in data formatting and code conversion between trading partners.
  - *BRIDGE* converts TELINK fixed record files from on release format to another.
  - *HOST "2" HOLD* works with TELINK to take a transaction set received from on trading partner and send a copy to another trading partner.
  - *SEPARATE* allows the user to extract transaction sets for specified trading partner from the inbound TELINK fixed record file and write them to different files based on Party Code.

- Support services include:
  - Training
  - Consulting
  - Service Center
    - telephone support
    - remote login trouble shooting/maintenance

TELINK Pricing

Product	Description	Fee
TELINK EDI Micro Software with EDI-MAX Mapper	• 2 buyer-selected transaction sets • #997 X-12 Functional Acknowledgment #999 UCS Acceptance/Rejection • 1 communications module to network of choice • EDI-MAX Mapper with 2 EDI-MAX modules	$3,800
TELINK/Single Trading Partner	• 2 buyer-selected transaction sets • #997 X-12 Functional Acknowledgment #999 UCS Acceptance/Rejection • 1 communications module to network of choice	$750
TELINK/sa	• 2 buyer-selected transaction sets • #997 X-12 Functional Acknowledgment #999 UCS Acceptance/Rejection • 1 communications module to network of choice	$1,500
TELINK	• 2 buyer-selected transaction sets • #997 X-12 Functional Acknowledgment #999 UCS Acceptance/Rejection • 1 communications module to network of choice	$2,300
Transaction Sets	-	$300 ea.
Communications Modules	-	$450 ea.
Carbon Copy Module	-	$300
Turnaround Module	-	$300
Separation Module	-	$400
Bridge Software	-	$800
Host "2" Hold	-	$800
EDI-MAX Mapper	-	$600 ea.

Vendor Issues and Trends

- Make standard transparent to user who must understand X.12 format and use it.

  - Would like to see templates that can facilitate formatting; currently not available
  - However, the more a template is tailored to a client, the more costly and less general purpose it becomes

- Using EDI over Internet

  - no infrastructure to support EDI
  - VANs offer
    - store and forward
    - security
    - routing tables, audit trails

- Standalone user is less technically sophisticated requires more services than a complex user; requires greater support and hand-holding.

TELINK

SOFTWARE UTILITES

EDI-MAX

EDI-Max is a full featured data mapper that works with TELINK to free the user from problems associated with changes in EDI standards, variations from trading partner to trading partner. data formatting, code conversion and much more. Written primarily in FoxPro, custom enhancements (User Defined Functions) can be easily made to meet a wide variety of special processing requirements.

BRIDGE

J COMPUTER SYSTEMS, INC.

BRIDGE is a software utility that converts TELINK fixed records files from one release format to another. If you have written programs that use the TELINK fixed record layouts to pass data to and from host applications, then BRIDGE can be used to eliminate the need for modifying the application programs as you go from version to version.

HOST "2" HLD

This utility works with TELINK to take a transaction set received from one trading partner and send a copy to another trading partner. Information in the Name Segment (N1) is used to determine whether a copy is to be transmitted and to whom. The Data Substitution feature allows for replacement of some data values when the copy is created.

Trading Partner Separation Routine

SEPARATE allows the user to extract transaction sets for specified trading partners from the inbound TELINK fixed record file and write them to different files based on Party Code. This feature is used when selected trading partners must be processed differently. Examples are testing with new partners, special handling of a key customer or sending copies to different host applications.

COMING SOON!

DATA TRACKER

DataTracker takes control number tracking to a higher level. Data Tracker follows a control number from start to finish for both inbound and outbound data. Features include: multiple network support, the ability to view infomation in a wide variety of different formats, look-up screens, and much, much more!

TELINK

...The Electronic Link to Business

The premier Electronic Data Interchange translation software, TELINK is...

- *an EDI translator that conforms to all major standards and industry subsets*
- *a table-driven system that operates on PC/MS-DOS and Unix, perfect for entry-level and experienced EDI users alike*
- *modular in design, allowing the user to configure the system with the transaction sets and features needed*
- *an automated way to transmit data between trading partners directly or via a public dial-up network*
- *menu-controlled for ease of use*
- *the translator chosen by systems integrators wishing to add value to existing business applications*
- *your EDI solution*

UNISYS
Marketing
Associate

TELINK SYSTEMS, INC.
An EDI, Inc. Company
19650 Club House Road
Gaithersburg, Maryland 20879
(301) 670-0811

EDI, Inc. and TELINK... Setting the Standard for EDI

Electronic Data Interchange (EDI) is the company-to-company electronic exchange of common business data such as invoices, purchase orders and ship notices using industry-approved standards. Experts agree that EDI is no longer the technology of tomorrow but the requirement of today — if businesses are to remain competitive in the world marketplace.

TELINK by EDI, Inc. was the first microcomputer-based EDI translator to support the full EDI standards. TELINK provides businesses with the means of conducting transactions regardless of the different internal applications or computers of their trading partners. TELINK continues to be the most functional, fully featured, robust and easy-to-use EDI system on the market.

More than 3,000 sites have installed TELINK systems worldwide. TELINK plays a major role in providing EDI functionality to such diverse industries as retail, manufacturing and transportation and is also heavily used in markets such as petroleum, chemicals, office products, aerospace, electronics and the federal government. EDI, Inc. works closely with small companies just getting started with EDI, as well as with large corporations wishing to develop broad-based EDI programs — including assistance with trading partner implementation.

The founders of EDI, Inc. made signifiicant contributions to the field of EDI, beginning in the early 1970s. EDI, Inc. personnel continue to maintain close ties with the ASC X12 committee and take an active part in the process of implementation of the standards, ensuring that TELINK will always serve the needs of the EDI community today and in the future.

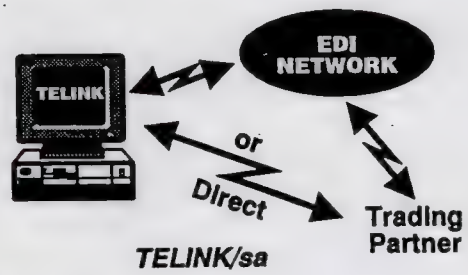
TELINK Family of Products

- *TELINK/micro is a table-driven microcomputer system featuring stand-alone and front-end functionality.*
- *TELINK/sa provides translation in stand-alone mode with a streamlined menu structure.*
- *TELINK/gw, with mapping capability, is designed for the front-end user.*
- *TELINK/osa is a Unix-based system specially designed for Unisys U6000-series computers. With EaDI Plus mapping software from Unisys, TELINK/osa provides a seamless EDI gateway for host applications.*

TELINK Versatility

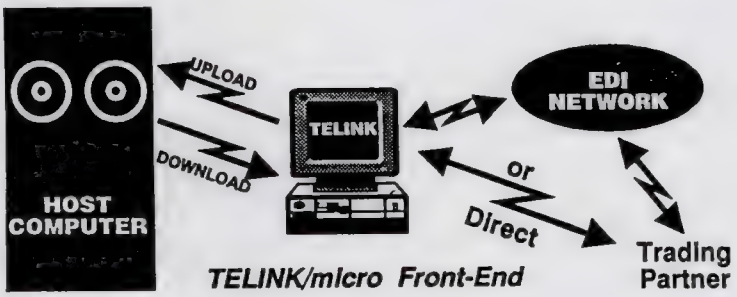
TELINK can operate in three distinct modes on two different platforms — without any special software — providing a flexible solution to match your changing needs.

- *Complete EDI functionality on your microcomputer*
- *Fast, efficient data entry*
- *"Off the Shelf" print routines*



TELINK/sa

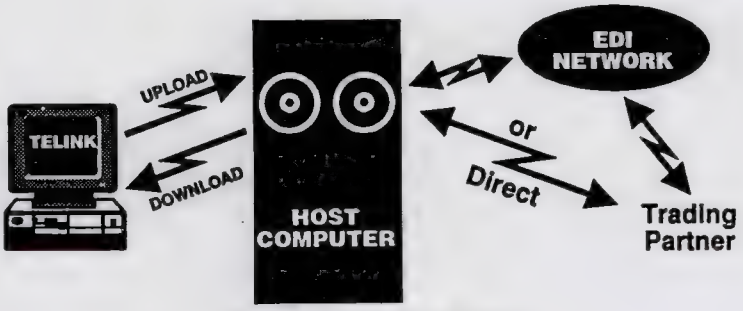
- *Exchange ASCII flat files between host and micro*
- *Smoothly integrate TELINK with any host applications*
- *Schedule unattended operations*
- *Mapping tool with TELINK/gw*



TELINK/micro Front-End

TELINK/gw Front-End

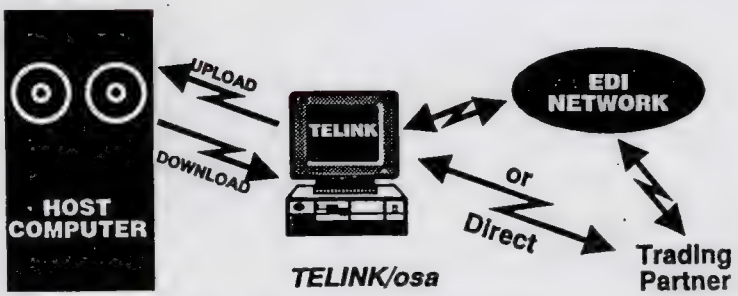
- *Off-load EDI processing from your host computer*
- *Utilize host-based communications without the cost of a host-based translator*



TELINK/micro Back-End

TELINK/gw Back-End

- *Open systems environment*
- *Seamless EDI*
- *Automated data mapping*
- *Flexible operations*
- *Reliable archiving and audit trails*



TELINK/osa

EaDI Plus Mapping Application
Unisys U6000-series Computer

Features of TELINK

- *available as an off-the-shelf software package, or hot-staged turnkey package*
- *can be used in a front-end or stand-alone environment*
- *practical, fill-in-the-blank screens guide you through entering transaction set data, with full on-screen compliance checking*
- *seamlessly integrate TELINK with host applications through an easy-to-use fixed-length record interface or mapping tool*
- *templates allow you to customize data entry screens by trading partner, transaction set and version*
- *turnkey updates available for all standard transaction sets and versions*
- *support of multiple concurrent versions, allowing you to accommodate all trading partner requirements*
- *track all EDI activity through easy-to-read management reports*
- *timer-activated automatic processing for unattended operation, allowing cost savings with off-peak transmission rates*
- *Help and List-of-Values windows that are instantly accessible to speed data entry and other operations*
- *standards compliance checking assures you that all transaction set data, both inbound and outbound, meet criteria specified in the EDI standards*
- *unique modular design allows you to add to your TELINK system as your EDI needs grow*
- *automatic recovery ensures that data is never lost in the event of power or communications failure*
- *help windows are available at the data element, segment, transaction set and program levels and are user-defined, allowing you to edit the help text to meet individual requirements*
- *supports communications to most third-party and private networks (others available on request)*

TELINK Support

- **EDI Standards** — Current, pre-release and post-release versions of ANSI X12, UCS and EDIFACT-based standards are supported.
- **Installation (Micro)** — EDI, Inc. will arrange, at no additional cost, telephone-based installation support. Onsite installation support is available for an additional fee.
- **Training (Micro)** — EDI, Inc. offers both TELINK software training and EDI implementation training.
- **Technical Support (Micro)** — Hot line support is offered from 8 a.m. to 6 p.m., Monday-Friday, EST. A 24-hour bulletin board service (BBS) is available to answer user questions and download software.
- Unisys offers a full range of services for EaDI mapping application, TELINK/osa and U6000 hardware including consulting, installation, training and customer support.

TELINK SYSTEMS, INC.
(an EDI, Inc. Company)

19650 Club House Road • Gaithersburg, MD 20879
(301) 670-0811 • FAX (301) 590-9284

PRICE QUOTE

FROM TELINK SYSTEMS, INC.

March 1994

TELINK EDI Micro Software License And EDI-MAX Mapper License Includes:

A) 2 Buyer-Selected Transaction Sets
With The Three Most Current Versions
EXAMPLE: Purchase Orders and Invoices

B) #997 X-12 Functional Acknowledgment
#999 UCS Acceptance/Rejection

C) 1 Communications Module To The Network
Of Your Choice Or To Transmit Directly To
Trading Partners

D) EDI-MAX Mapper
With Two EDI-MAX Modules

Total	$3,800

Annual Maintenance Is 18% Of The License Fee*

* Annual Maintenance Includes:
Hotline Technical Support
System Updates And Enhancements
EDI-MAX Mapper Remote Installation

NOTES:

1. There is no cost to add trading partners, and each transaction set will satisfy any partner using the same module number.

2. You can add unlimited transaction sets, or other optional features with the initial purchase or at a later date.

3. There are multiple site or user discounts available.

TELINK SYSTEMS, INC.
(an EDI, Inc. Company)

19650 Club House Road • Gaithersburg, MD 20879
(301) 670-0811 • FAX (301) 590-9284

OPTIONAL ITEMS FOR TELINK SOFTWARE:

Transaction Sets	$300 ea.
Network Communication Modules	$450 ea.
Multiple Network Connectivity	$200
Version Upgrade For TELINK/sa	$200
Version Upgrade For TELINK/Micro	$250
Carbon Copy Module	$300
Turnaround Module	$300
Trading Partner Separation Module	$400
Bridge Software	$800
Host 2 Hold	$800

EDI-MAX MAPPER:

Core System	$400*
* Requires one EDI-MAX Module for each transaction set to be mapped.	
Annual Maintenance, based on core & modules purchased	18%

OPTIONAL ITEMS FOR EDI-MAX SOFTWARE:

EDI-MAX Module	$600 ea.
EDI-MAX Module, 3 Or More	$500 ea.
EDI-MAX PLUS Module	$800 ea.
FORMS-MAX Module	$850
On-Line Demo	$150*
* Credited To The Purchase Of EDI-MAX	

TRAINING AVAILABLE:

For TELINK/sa, One Day	$325 Per Person
FOR TELINK/Micro, Two Days	$525 Per Person

CONSULTING SERVICES AVAILABLE:

Remote Consulting Services	$100 Per Hour
On-Site Consulting Services	$100 Per Hour**

**Written estimates will be provided, including travel and hotel expenses when applicable.

TELINK SYSTEMS, INC.
(an EDI, Inc. Company)

19650 Club House Road • Gaithersburg, MD 20879
(301) 670-0811 • FAX (301) 590-9284

PRICE QUOTE

FROM TELINK SYSTEMS, INC.

March 1994

TELINK/Single Trading Partner EDI Software License Includes:

A) 2 Buyer-Selected Transaction Sets
With The Three Most Current Versions
- EXAMPLE: Purchase Orders and Invoices

B) #997 X-12 Functional Acknowledgment
#999 UCS Acceptance/Rejection

C) 1 Communications Module To The Network
Of Your Choice Or To Transmit Directly To
Trading Partners

Total $750

Annual Maintenance Is 18% Of The License Fee*

* Annual Maintenance Includes:
Hotline Technical Support
System Updates And Enhancements

NOTES:

1. This software will allow you to do EDI transactions with only one trading partner. You may upgrade to a multi-trading partner system at any time.

2. You can add unlimited transaction sets, or other optional features with the initial purchase or at a later date.

3. There are multiple site or user discounts available.

THIS PRICE QUOTE IS VALID FOR 30 DAYS FROM DATE OF ISSUE

TELINK SYSTEMS, INC.
(an EDI, Inc. Company)

19650 Club House Road • Gaithersburg, MD 20879
(301) 670-0811 • FAX (301) 590-9284

PRICE QUOTE

FROM TELINK SYSTEMS, INC.

March 1994

TELINK/sa EDI Software License Includes:

A) 2 Buyer-Selected Transaction Sets
With The Three Most Current Versions
EXAMPLE: Purchase Orders and Invoices

B) #997 X-12 Functional Acknowledgment
#999 UCS Acceptance/Rejection

C) 1 Communications Module To The Network
Of Your Choice Or To Transmit Directly To
Trading Partners

Total $1,500

Annual Maintenance Is 18% Of The License Fee*

* Annual Maintenance Includes:
Hotline Technical Support
System Updates And Enhancements

NOTES:

1. There is no cost to add trading partners, and each transaction set will satisfy any partner using the same module number.

2. You can add unlimited transaction sets, or other optional features with the initial purchase or at a later date.

3. There are multiple site or user discounts available.

THIS PRICE QUOTE IS VALID FOR 30 DAYS FROM DATE OF ISSUE

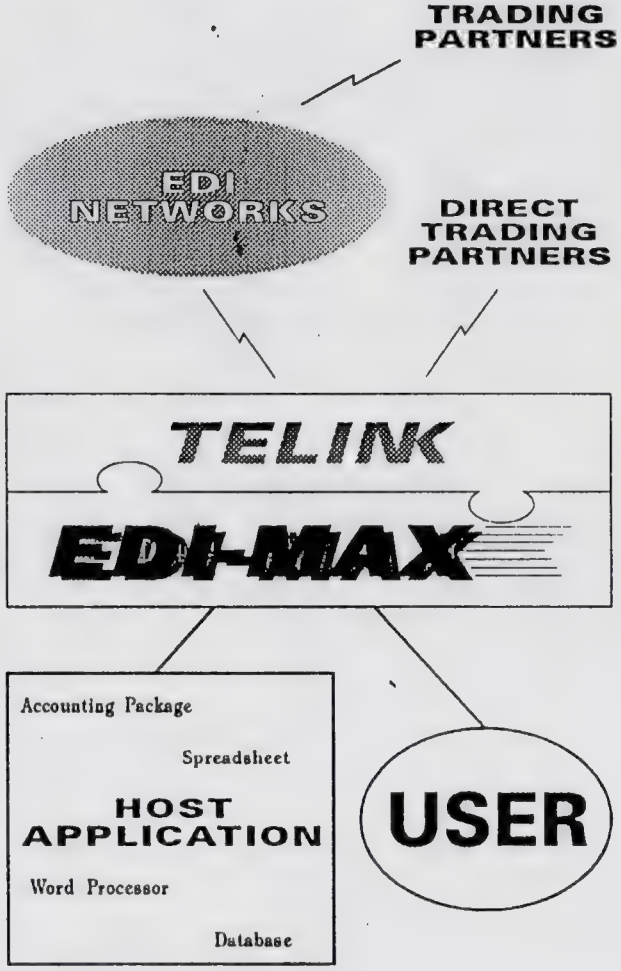
EDI-MAX

UNLEASH THE TRUE POWER OF EDI...

The EDI-Max product line is made up of interrelated mapping and application modules, providing the freedom to select only those modules needed. Transaction-specific Document-Max modules allow the user to exchange data with TELINK and map the data to meet host application requirements. EDI-Max produces a standard ASCII file based on a profile created by the user. This file is then ready for export to a mainframe, accounting package, or customized order entry system. EDI-Max can export data into a database form compatible with DBase, Clipper, RBase, FoxPlus, and Foxbase. Data can also be exported to .DIF files used by VisiCalc, .MOD and SYLK files used by Microsoft Multiplan, .WK2 and .WKS files used by Lotus 1-2-3, .WRK files used by Lotus Symphony, and .XLS files used by Microsoft Excel.

EDI-Max provides a user-friendly on-line interface complete with context-sensitive help. The EDI-Max menu system is completely mouseable and easy to understand, and also provides 'hot keys' for all heavily used functions for the experienced user. EDI-Max can also be launched by a single batch command from DOS to perform tasks defined by parameters in the batch command. With this feature, EDI-Max can be seamlessly integrated within TELINK's automatic scheduling feature to perform your EDI completely unattended.

The Plus Modules provide a more functional approach to dealing with your documents. For example, the Forms-Max module for 850-Max allows the user to create their own reports, invoices, packing slips, etc. The report may contain text, data elements, boxes, columns, and calculated fields arranged in any format you choose. Features include automatic pagination, optional time and date stamp, bold, italic, and underline print, and a number of printer drivers to accommodate most printers.



EDI-Max –
The Missing Piece of the Puzzle!

Forms-Max also works with your existing pre-printed forms to provide a complete report development tool. 852-Max Plus is the best module for handling valuable sales data. Tracking this data can be as easy as printing a cumulative report perfect for your company.

EDI-Max contains both EDI code conversion and custom codes conversion abilities. Incoming data may be replaced with either the EDI code or any of up to twenty one user definable codes. These codes may be used with the mapper as well as with Forms-Max.

Generating EDI from a text file is also a snap with EDI-Max. A one time setup allows a proprietary file of your design to be imported and manipulated to produce EDI data for TELINK to translate and send out. Your EDI solution has now come full circle– from interpretation to generation.

The EDI-Max product line is integrated with TELINK, the EDI Management System from EDI, Inc. EDI-Max brings a whole new dimension to the EDI community by providing powerful mapping and database applications developed in FoxPro, the foremost database software for micro computers.

Simply stated, EDI-Max with TELINK provides one of the most powerful, flexible, and expandable systems in the EDI marketplace today.

TELINK SYSTEMS, INC.
(an EDI, Inc. Company)

Maria A. Ryan
Account Manager

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TELINK tm

...because it's your business

Beyond paper, when EDI is your next step

TELINK is the premier translation software of the '90s. From micro to mainframe, EDI, Inc. has the solution to your business needs.

America's premier businesses use TELINK for their EDI translation needs. Here's a sampling of users from A to Z:

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- BP International
- Coca-Cola Foods
- Dole Pkg. Foods
- Eveready Battery
- Fisher Scientific
- General Services Administration
- Harvard University
- Imperial Oil
- James River Corp.
- Kaiser Aluminum
- Land-o-Lakes
- Mobil Chemical
- Nabisco Brands
- Ocean Spray
- Pillsbury
- Quill
- Rockwell International
- Scott Paper
- Turtle Wax
- U.S. Army, Navy
- Vlasic Foods
- Wm. Wrigley, Jr. Company
- Xerox
- Yamaha
- Zenith Data Systems

EDI with TELINK — software from the experts who helped create the EDI standards.

TELINK Systems, Inc.

A wholly owned subsidiary of EDI, Inc.

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INTERNET USER: STANFORD PUBLICATIONS INTERNATIONAL (SPI)

Internet User Profile

- Stanford Publications International (SPI) is a e-mail book order fulfillment service using Internet as its means to determine availability of titles, place book orders, invoice book orders with predominantly Japanese customers.

- SPI predominantly uses e-mail to conduct business.
  - SPI uses a SLIP dial-up line; router not required
  - In some cases, FTP is utilized for file transfer to obtain more information from the publishers.
  - SPI's Internet access provide is *a2i Communications* of San Jose
  - Uses Internet to access NIFTYserve to communicate with Japanese customers.

- Problems experienced
  - Go off-line occassionally
  - Slow line speed (14.4 Kpbs) for his needs.
  - E-mail info must be ascii; binary files must first be translated (by service provider)
    - Now uses Macintosh ftp to overcome problem

- SPI's Internet Provider Selection Criteria (priority order)
  - Price
  - Availability of service
  - Local vendor
  - Multiple points of presence
  - News feed service

STANFORD PUBLICATIONS INTERNATIONAL
P. O. Box 9814, Stanford, CA 94309-9814 USA
Phone: (415) 497-0357
Fax: (415) 497-0449
E-mail: spi@rahul.net

1994年3月10日

各位　殿

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当社は、独自の直販体制により、通常では考えられない価格で、かつ迅速に洋書をお届けできると自負しております。

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ご注文（お問い合わせ）方法

本の著者名、書名、お届け先を明記の上、下記までご連絡ください。

１．ファックス：　日本国内 053-577-3762*

アメリカ直通 415-497-0449

＊日本国内に送っていただいた場合は、時差の関係で処理が１日遅れます。

２．電子メール：　spi@spi-usa.com (Internet)

お支払い方法

お支払いは、円建て、ドル建ての両方が可能です。請求書は、注文後に発送させていただきます。

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日本円でのお支払いは、請求書に記載されている、円価格にて、下記までお振り込み下さい。三和銀行ご利用の場合の振り込み手数料は、150円程度です。

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NIKKEI COMMUNICATIONS 1994.2.7 No.167

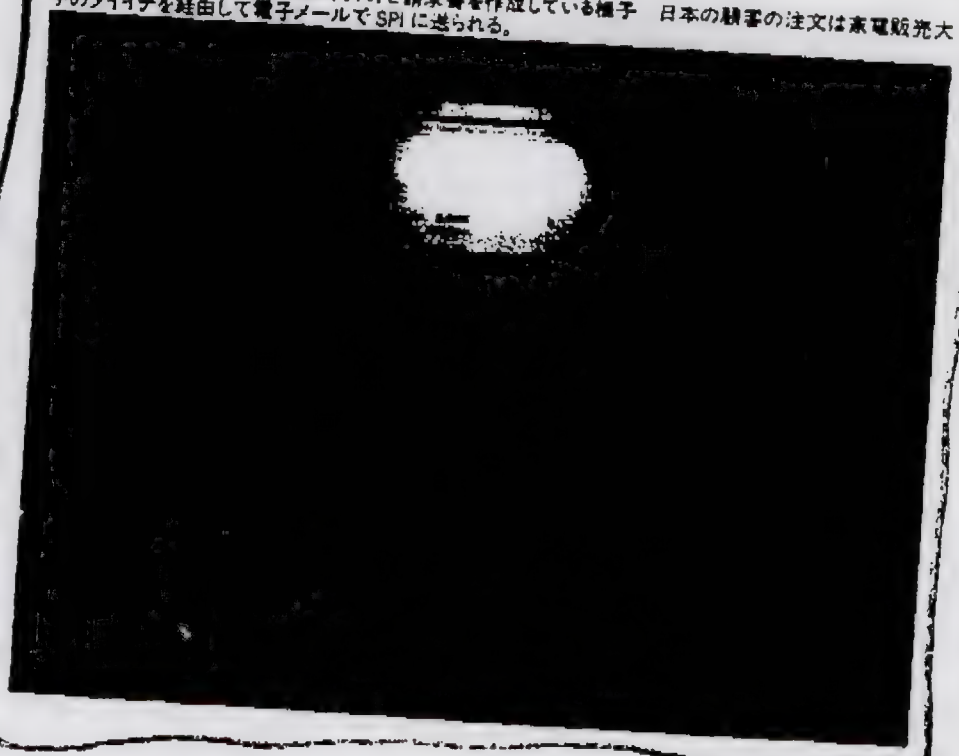
特集——40
企業通信の変革迫る 超巨大網「インタネット」



トレンド——35
ATM-LANにらんだ 次世代ハブ登場

解説——86
どこまで使えるか無線LAN
——実アプリケーションで徹底検証——

写真1-2　米SPIで書籍の注文リストと請求書を作成している様子　日本の顧客の注文は家電販売大手のダイイチを経由して電子メールでSPIに送られる。



の別々のアイコンとして表示できる。つまり，インタネット・アクセス用のメニュー画面を作れるわけだ。エンドユーザーはコマンドを使わなくて済む。通信相手のIPアドレスさえ知っていればよい。

オライリだけでなく，一部の商用インタネットのプロバイダが，同様のインタネット・アクセス用ソフトを提供し始めている。

オンライン雑誌で広告効果

利用目的を問わない商用インタネットを営利目的で使う企業も登場した。象徴的な例は，出版やオンライン販売である。

前述のオライリ・アンド・アソシエイツは93年9月からインタネット上でオンライン雑誌の提供を開始した。雑誌の名称は「Grobal Network Navigator（略称GNN）」。週1回のベースでデータを更新するニュース，インタネット上のリソース情報，インタネットの市場（Marketplace）などいくつかの項目がある（写真1-1）。

同社がビジネスにしている部分は，GNN Marketplaceと名付けたコーナーでの商品情報提供と，オライリ自身が発行している書籍の案内である。

GNN Marketplaceには，コンピュータ・メーカーの製品情報などがある。これらの製品情報は，オライリにとってみれば雑誌の広告である。情報提供者からは，1件当たり3カ月で5000ドルなどの広告料をとっている。GNNの読者から購読料は取っておらず，インタネットに接続しているユーザーなら無料で情報を入手できる。

製品情報は実際にはオライリではなく，情報提供者であるメーカー自身のサーバー上にある。製品情報があるサーバーのアドレスを知らなくても，GNNの画面上からダイレクトにアクセスできる仕組みになっている。

もう一つのオライリの書籍案内は，オライリ自身が，自社で出版している書籍情報を提供するものである。もちろん，これを見たユーザーは直接オライリに電子メールで注文ができる。

GNNは研究者だけに向けたものではなく，明らかに営利目的である。

Tim O'Reilly社長は，「今後はインタネット上で書籍を出版したい。現在，ユーザーにとってはGNNは無料だが，書籍を発行するときには，ユーザーにも有料で提供したい。有効な方法を検討中だ」と言う。同様に，他の出版社と協力してGNN以外の雑誌をオンライン化することについても検討中である。

日本向けに洋書を販売

93年12月から，日米の商用インタネットを利用して洋書販売のサービスを始めたのが米スタンフォード・パブリケーションズ・インターナショナル（SPI）と日本の家電販売業者のダイイチである。

「海外の書店に洋書を注文すると，書籍代の他に送料がかかる。この送料が高く，例えば30ドル前後の本1冊だけで30ドル近くの送料が必要になる。つまり，約60ドル払わなければならない。ところが，購入する本の数が多くなると，1冊当たりの送料は安くなる。そこで，日本からの洋書の注文を一括して受けることで，本1冊

当たりの送料を安くするサービスを始めた」(SPIのSam Sugimoto社長)。

ユーザーは事前に印刷物のカタログを見てインターネットの電子メールでダイイチに注文する。ダイイチは，日本国内の注文を束ねる拠点である。ダイイチはユーザーからの注文をインターネットの電子メールでSPIに転送する。SPIはスタンフォード・ブックストアに出す注文リストとユーザーに渡す請求書を作成し，本と一緒に請求書をユーザーに発送する。その後，ユーザーに発送完了を知らせる電子メールを送る。SPIは今後，スタンフォード・ブックストアの洋書データをAT&T Jensに提供し，インターネット上に洋書データベースを構築する計画である。

「いつでも，どこでも，誰とでも」

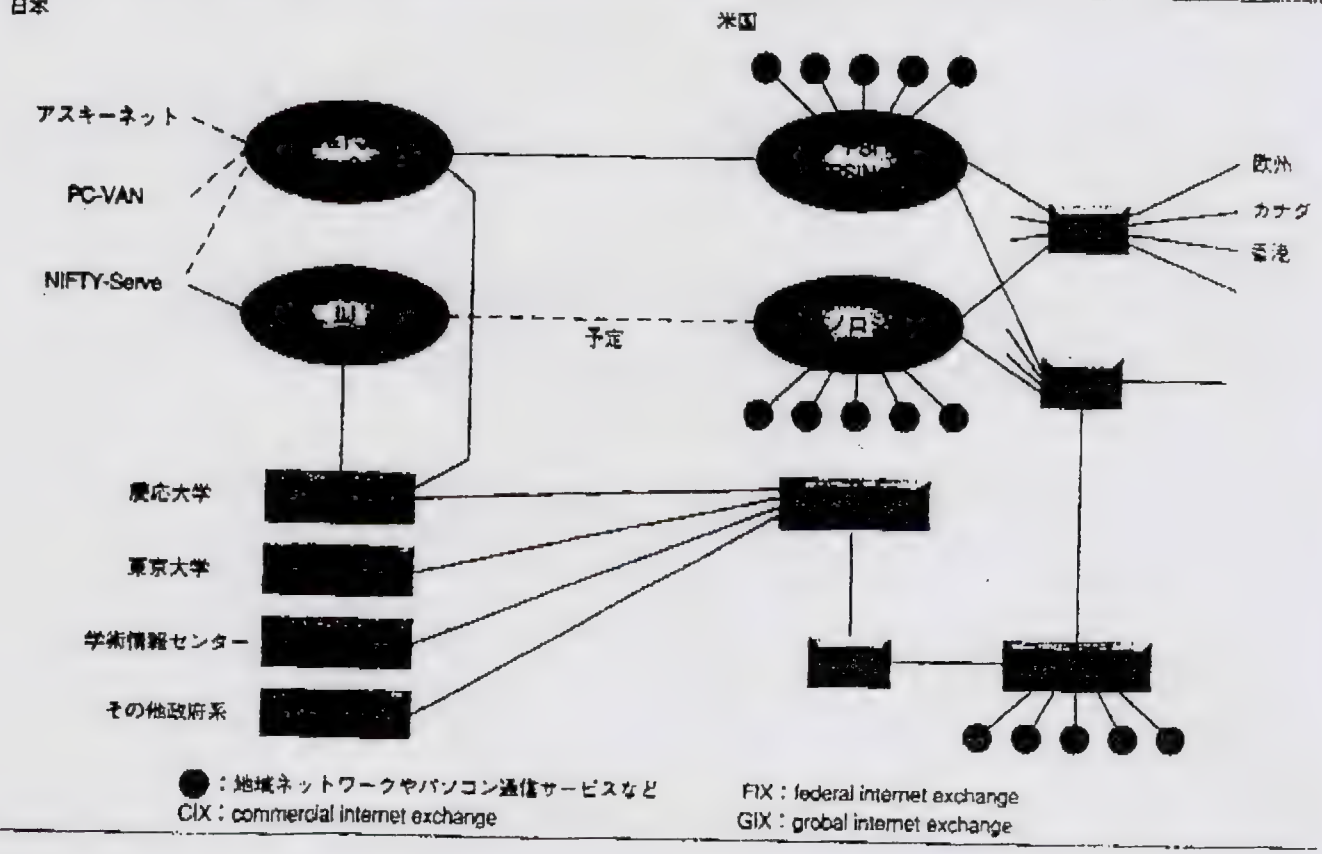
インターネットには数多くのサーバーがあるが，このうち米国の大学や企業が提供しているものが圧倒的に多い。世界中で群を抜いている。インターネット人口の分布を見ても，全世界の半数以上が米国ユーザーである。日本の商用インターネットはまだサービスを始めたばかりで，国内のユーザー数やリソースの数からすると米国に後れをとっている。

しかし，米国で培われた資産は米国ユーザーだけのものではない。世界中のインターネットの多くは相互接続しており，世界中どこからでも誰でもがインターネット上のリソースを利用できる。日本のユーザーにとっても条件は同じ。米国のユーザーと同じ機能，同じリソースを享受できるのである(図1-2)。

しかも，ユーザーは同一料金で国内も国際も利用できるという恩恵を受けられる(接続料金についてはPART 3参照)。

米国で商用インターネットの営利目的での利用が始まったとはいうものの，今はまだ情報提供サービスが中心。企業間取引のような使い方は米国でも稀である。ビジネスに利用する場合，どんな用途に使えるかはまだ手探り状態だ。どう使うかはユーザー次第である。

図1-2 日米のインターネット 研究用のインターネット，商用インターネットがあり，それぞれ相互接続している。ただし，IIJは日米間ではTCP/IPの機能をフル活用できるIP接続はまだできていない。



SECTION V

APPENDIX

- INTERNET VENDOR DISCUSSION FRAMEWORK

- INTERNET VENDOR DISCUSSION FRAMEWORK

INTERNET COMMERICAL VENDOR DISCUSSION FRAMEWORK

1. What commerical services are offered by you? Examples

   - Internet access: Yes____ No _____
   - E-Mail: Yes____ No _____
   - File Transfer: Yes____ No _____
   - Information Data Base Services (What kind?): Yes____ No _____
   - EDI: Yes____ No _____

   - If yes, EDI offered, please make sure to ask the following questions with a EDI slant, where applicable and ask Questions 8 -13 in addition to 1 -7

   - If no, (for those service provides that do not currently offer EDI via Internet ask)

     a. Why not?
     b. Do you expect to offer it in the future? and if so, via **Internet? WHEN? WHY?**

2. Is your network connected to Internet for commercial or / and educational purposes?

   What other networks (if any) are your services offered on? (Public or Proprietary)

INTERNET VENDOR DISCUSSION FRAMEWORK (Cont.)

3. What (industry) sectors use your services accessed through internet?

    - What applications? (Try to profile by industry those applications)
    - Who is your customer? (Profile user)

4. Do you provide IP (Internet Protocol) network services and UUCP network services?

    - Where do you place the router/gateway for IP services, on the customer's premise or on your, the vendor's premise?

5. How are your services priced?

    - If service problems arise due to the host computer or router used, due you offer any compensation to the end user?

    - If there is any service problems that arise due to the external network (Internet) what compensation if any do you offer the end user?

6. What technological capabilities do you expect from your Internet customers? For example - TCP/IP

7. Can you please send any service descriptions, brochures, pricing schedules, etc. that you may have on hand to help clarify in our information

INTERNET VENDOR DISCUSSION FRAMEWORK (Cont.)

** *For those service providers that offer EDI please asked these additional questions:*

8. What EDI services are currently offered? To which targeted industry sectors?

    - Do you offer EDI via Internet?
        - Why?
        - How long have you offered EDI via Internet?

9. Which EDI standards are used? (for example - X.12, EDIFACTS)

10. What protocols are used? (for example - FTP or SMTP for E-Mail)

11. What security facilities/features are offered as part of EDI service?

12. Why do use Internet as a access mode for EDI?

13. What main issues (technical or business) do you face in the provisioning of EDI services?

Please make sure to document any points with regard to EDI or Internet service offering in general that may come up in the process of this discussion.

- EDI Vendor Discussion Framework

- EDI Vendor Discussion Framework

EDI VENDOR DISCUSSION FRAMEWORK

1. What commercial services are offered by you? (Any changes to Nov, 1992 Input Published Research)

2. What (industry) sectors use your EDI services?

   - What applications? For which industries? (Profile by industry those applications)
   - Who is your customer? (Profile user)

   - **Do you offer EDI via Internet?**
     - **Why? Why not?**
     - **Why don't you use Internet as a access mode for EDI?**

   - **Do you expect to offer it in the future? and if so, via Internet? WHEN? WHY?**

3. How are your services priced?

4. Service Issue Resolution?

   - If there is any service problems that arise due to the network access options what compensation if any do you offer the end user?

5. What technological capabilities do you expect from your EDI customers?

EDI VENDOR DISCUSSION FRAMEWORK (Cont.)

6. Which EDI standards are used? (for example - X.12, EDIFACTS)

7. What protocols are used?

8. What security facilities/features are offered as part of EDI service? (To be further explored in face to face discussions)

9. What main issues (technical or business) do you face in the provisioning of EDI services? Trends/Issues?

10. Can you please send any service descriptions, brochures, pricing schedules, etc. that you may have on hand to help clarify in our information gathering process.

Please make sure to document any points with regard to EDI or Internet service offering in general that may come up in the process of this discussion.